University of Alberta

A Challenge to Speciesism

Lynda Ann Downie©

A thesis submitted to the Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Arts

Department of Philosophy

Edmonton, Alberta

Fall 2002

National Library of Canada
Acquisitions and Bibliographic Services
395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale du Canada
Acquisitions et services bibliographiques
395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-81302-9

Canada

University of Alberta

Library Release Form

Name of Author: Lynda Ann Downie

Title of Thesis: A Challenge to Speciesism

Degree: Master of Arts

Year This Degree Granted: 2002

Permission is hereby granted to the University of Alberta Library to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or scientific research purposes only.

The author reserves all other publication and other rights in association with the copyright in the thesis, and except as herein before provided, neither the thesis or any substantial portion thereof may be printed or otherwise reproduced in any material form whatever without the author' prior written permission.

Lynda Downie

#302 9930 Bellamy Hill Rd. N.W.
Edmonton, Alberta
T5K 2B5

Sept 30/02

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *A Challenge to Speciesism in Lewis Petrinovich and Defenders of the AMC* submitted by Lynda Ann Downie in partial fulfillment of the requirements for the degree of *Master of Arts.*

Margaret M. Van de Pitte

Allen A. Carlson

Glenn G. Griener

Susan Hamilton

Sept. 25, 2002

Dedication

This thesis is dedicated to Sasha, Micalen, and Nicole, my companion cats, who put up with me while it was being written, and to all animals who suffer at human hands.

Abstract

This thesis challenges Lewis Petrinovich's biologically based justification of speciesism in *Darwinian Dominion*. Petrinovich argues that humans possess a bundle of unique characteristics, setting them apart biologically and morally from other species. He defends speciesism against the Singer-Regan charge of bigotry by showing that attempts to draw comparisons between human and animal interests end in inconsistency and 'backdoor speciesism'.

I argue, first, that Petrinovich has failed to support his argument for human uniqueness: I identify and challenge his key claims-birth determines moral status, emotional bonds justify speciesism, and humans alone are moral agents. Following an examination of Daniel Dombrowski's *Babies and Beasts*, I then concede that defenders of 'the argument from marginal cases' (the AMC) indeed end in speciesism but deny that speciesism is therefore inevitable or justified. Finally, I suggest that speciesism can be opposed through continuing development of the AMC.

Table of Contents

Introduction 1
Historical Background - Singer's Analogy Between Racism, Sexism, and Speciesism - Speciesism-The Debate - Regan's Rights Theory - The Present Work - Petrinovich's Bioethics-Preliminary Remarks - Petrinovich's Argument in Brief - My Thesis - Methodology - Outline

Chapter 1. Petrinovich's Biologically Based Speciesism 9
1.1. Petrinovich's Thesis 9
1.2. The Moral Patient-The Emotional Argument 11
Moral Patients - Regan's Moral Patients - Birth Determines Moral Status - Persons - All Persons Are Not Equal - Private/Public Distinction - Recognition As A Human - Morality is Interpersonal - Human Emotional Responses - Summary
1.3. Emotional Bonds Justify Speciesism 20
Hume's Challenge - Motives and Consequences in Morality - Moral Deliberation - Empirical Support - Biological Species - The Concept of Species
1.4. Conclusion 27

Chapter 2. The Moral Agent-The Cognitive Argument 29
2.1. Petrinovich's Thesis 29
2.2. Language 29
Qualitative Difference: - Primate Language Studies - Kanzi! - Neuroethological Studies - Communication Comprehension Studies
2.3. Summary 34
The Importance of a Language Environment
2.4. Petrinovich's Thesis 37
2.5. Theory of Mind 37
Intentionality - Clever Behaviorists? - Imitation and Joint Reference
2.6. Cognitive Ethology and Cognitive Science 41
Cognitive Ethologists - Analysis of Canid Social Play - Intentional Icons
2.7. Deception as Evidence of Intentionality 44

2.8. Simulation Theory and Mirror Neurons 48
2.9. Summary 48
Drugs or Deception? - Why the Stress? - Moral Rhesus Monkeys? - Only Humans Have a Theory of Mind?

Chapter 3. The Argument From Marginal Cases 54
3.1. Introduction 54
3.2. The AMC 54
3.3. Petrinovich's Speciesism 55
3.4. Defenders of the AMC 56
3.5. Petrinovich's Defense 56
My Response to Midgley and Devine
3.6. Categories and What They Tell Us 57
The Analogy Between Racism, Sexism, and Speciesism - No Overlap Between Animals and Humans?
3.7. Petrinovich s Argument Against Regan and Singer 60
Regan's Inherent /Intrinsic Value Distinction - Different Yet Equal
3.8. Fantasy Dilemmas and Backdoor Speciesism 65
The Harm Principle - Support for Regan's View - Isn't This Speciesism? - Petrinovich and Defenders of the AMC - But Isn't This Speciesism?
3.9. Beware of Fantasy Dilemmas 72
3.10. Speciesism Not Justified 75

Works Cited 80

Introduction

Until recently, moral philosophy dealt chiefly, if not exclusively, with issues involving human beings. Remarkably, however, today the interests of non-human animals* have a place in moral discourse. Within the newly recognized field of study, animal ethics, philosophers now engage in critical examination and analyses of issues concerning animals. Among the issues studied is that of speciesism, which is my particular interest and the subject matter of the present work.

Historical Background

A quick glance at the arguments that sparked discussion about speciesism, I think, will provide a clearer sense of the background from which my work emerges. The term 'speciesism' was coined by Richard Ryder, in 1970, to refer to what he perceived to be unjustified discrimination against animals simply because they were animals.[1] It was Australian philosopher, Peter Singer, however, who drew attention to the issue of speciesism through his influential and accessible book, *Animal Liberation,* which he published in 1975.[2]

Singer's Analogy Between Racism, Sexism, and Speciesism

Singer, like Ryder, points out the parallels between racism, sexism, and speciesism. Where individuals have similar interests, Singer argues, moral consistency requires that equal consideration be given to the interests of each individual. Race and sex, for example, play no role in determining whether an individual has the intellectual or moral capacity to vote. It would be a form of racism or sexism,

---

*Hereafter, I will simply use the term *animal* (recognizing that humans, too, are animals) because the term 'non-human' suggests to me a definition in terms of what an animal is not. I use the term for convenience, recognizing that *animal* is a broad category, including many species and individuals among species.

[1]Ryder, R.D. *Animal Revolution.* Oxford: Basil Blackwell, 1989, p 338.

[2]Singer, Peter. *Animal Liberation.* Wellingborough: Thorsons Publishing Limited, 1975, p 18.

therefore, to decide on the basis of an individual's race or sex whether or not to consider her interest in voting.[3] On the other hand, because infants and the mentally disabled do not have the intellectual or moral capacity of normal adult humans, it makes no sense to insist that equal consideration be given to their interest in voting. Infants and the mentally disabled, however, like normal adults, are sentient, and as such, have the capacity to feel pleasure and satisfaction. Accordingly, moral consistency urges us to consider equally the interest of all sentient humans in avoiding pain and experiencing pleasure. Animals, no less than human infants and the mentally disabled, Singer continues, are sentient, and as such, should be accorded comparable moral consideration. To do otherwise, Singer argues, would be to show a bias for human beings and against animals; that is, to be a speciesist.[4]

Speciesism-The Debate

Philosophers have put forward various arguments, each with its own particular stress and perspective, that have challenged, supported, or developed the whole or some aspect of Singer's original argument, which has come to be called 'the argument from marginal cases' (hereafter, the AMC). Most of the argumentation engendered by Singer's position has centered on 3 broad issues: 1) the utility vs rights debate, 2) the appropriateness of drawing comparisons between the interests of humans and animals, and 3) the question of whether speciesism is a form of prejudice analogous with racism and sexism. Notable here is Tom Regan's challenge to speciesism in *The Case For Animal Rights*, which he published in 1983.[5] In this work, I will be examining the latter two issues that have been engendered by Singer's original argument.

Regan's Rights Theory

---

[3]Singer, 1975, p 3.
[4]Ibid, p 18.
[5]Regan, Tom. *The Case For Animal Rights*. Berkeley: University of California Press, 1983.

Regan's approach to animal ethics, while in one sense a challenge to that taken by Singer, is in another important sense, an affirmation of Singer's position. Singer's animal ethics was developed within a utilitarian framework. Singer widened the application of the utilitarian principle to include animals among those whose pleasures and pains are given impartial consideration. Equality and impartiality are central features of Regan's rights theory, as well. "The idea of impartiality is at the heart of...the *formal principle of justice*"[6], the guiding principle of Regan's theory. According to the formal principle of justice, similar cases should be treated similarly, different cases, differently. Though the principle does not specify which factors are relevant in determining similarities and differences, it requires that an account be given of how we distinguish similar and dissimilar cases. If it is claimed, for example, that suffering is wrong in the case of humans but not in that of animals, it must be shown how a biological difference makes the two cases morally dissimilar.[7] Regan, like Singer, insists that the interests of animals and humans should be given equal consideration where they have similar interests.

Though Regan acknowledges that Singer's utilitarian account complies with the formal principle of justice, he favors a different interpretation of the principle. According to Regan, all individuals with inherent value[8] possess it equally. That is, no individual, no matter how gifted intellectually, socially, or morally, has a higher degree of inherent value than any other. "Inherent value is thus a *categorical* concept. One either has it, or one does not."[9] Accordingly, formal justice requires that respect be shown equally to all individuals with inherent value. Moral conflicts cannot be resolved, therefore,

---

[6]Regan, 1983, p 128.
[7]Ibid, pp 128-29.
[8]Ibid, p 243. Individuals with inherent value are those who meet Regan's *subject of a life* criterion (i.e. have beliefs and desires, a sense of the future, a psychophysical identity over time, etc.) For a complete account, please refer to p 243.
[9]Ibid, pp 240-41.

by determining relative inherent value, nor, indeed, by a utilitarian calculation in which an aggregate of satisfactions has more value that the satisfactions of a single individual. Regan opposes Singer's utilitarian approach to animal ethics, therefore, because justice demands that respect be shown for the equal inherent value of individuals. The amassed sum of inherent value of individuals in a group is no greater than that possessed by a single individual, according to Regan.

The Present Work

In this thesis, I explore the issue of speciesism through an examination of arguments provided by an avowed speciesist, Lewis Petrinovich in his *Darwinian Dominion*[10] and by philosophers opposing speciesism through the AMC, as presented in Daniel Dombrowski's *Babies and Beasts.*[11] My presentation of the two works violates chronological order. I begin with, and concentrate primarily on, Petrinovich's defense of speciesism, followed by a much briefer examination of Dombrowski's defense of the AMC, even though Dombrowski's *Babies and Beasts* was published two years prior to Petrinovich's publication of *Darwinian Dominion* in 1999. My purpose in inverting the chronological order of the works is to reflect what I take to be the fundamental order of the arguments. Speciesism, according to Petrinovich, is based in our biology. Speciesism, then, being biological and thus pre-reflective, means that, in a certain sense, Petrinovich's biological justification of speciesism is prior to the philosophical challenge to speciesism by defenders of the AMC.

Petrinovich's Bioethics–Preliminary Remarks

Although Petrinovich's biologically based speciesist position is a recent contribution to animal ethics, the idea of grounding ethics in biology is not new. Herbert Spencer applied Darwin's theory of evolution to philosophical problems in the mid 1800s[12], though in a way quite at odds with Darwin's egalitarian

---

[10]Petrinovich, Lewis. *Darwinian Dominion.* Cambridge: The MIT Press, 1999.
[11]Dombrowski, Daniel. *Babies and Beasts.* Chicago: University of Illinois Press, 1997.
[12]Spencer, Herbert. *The Data of Ethics.* New York: Thomas Y. Crowell and Company, 1879.

perspective on animals. Closer to our time, Edward O. Wilson linked evolutionary principles with social behavior in his controversial book *Sociobiology: The New Synthesis.*[13] Petrinovich, a bioethicist and research scientist, contributes to the current discussion about speciesism in two important ways. In the first place, Petrinovich, like his predecessors, gives biological evolution a central role in his ethical position. Taking the biological natures of individuals into account is essential, I think, in our ethical theorizing. Because an animal does not behave as we do when in pain, for example, does not justify a lack of moral concern for her pain. As Bernard Rollin points out: "(I)t is a selective evolutionary survival advantage for a cow to eat regardless of how it feels...(A) cow that didn't graze with the rest of the herd would be flagged as vulnerable to predators."[14] Secondly, Petrinovich's argument, I think, is an attempt to provide a biological justification of the age-old and commonly held assumption that for all our similarities to animals, we are still morally distinct from them simply because we are biologically human. His argument is important, I think, because it brings to the discussion the challenge of a large number of people who believe unquestioningly that a moral boundary exists between human beings and animals, that justifies our differential treatment.

Petrinovich's Argument In Brief

In *Darwinian Dominion,* Petrinovich argues that human beings possess a complex bundle of unique characteristics that set them apart both biologically and morally from other species. He presents three major justifications for speciesism. His first justification is an appeal to the emotional bonds between members of the human species that have evolved to increase the likelihood of survival and reproductive success of each neonate. According to Petrinovich, emotional bonding between the neonate and the human community is the biological base upon which a moral distinction can be made between the

---

[13]Wilson, Edward O. *Sociobiology: The New Synthesis.* Cambridge: Harvard University Press, 1975.
[14]Rollin, Bernard E. *The Unheeded Cry.* New York: Oxford University Press, 1990, p 135.

neonate and animals of other species. He says that: "(t)his base concerns the identity of the neonate as a member of our biological species, and this membership places it in a special category entitling it to treatment as a member of the social community."[15] His second justification is an appeal to cognitive capacities that he claims are probably unique to humans and necessary for moral agency. The criteria for moral agency, according to Petrinovich, involve the ability to understand rules, duties, obligations, and causality, as well as having a ToM (theory of mind).[16] His third justification is an appeal to the pervasiveness of speciesism, even among philosophers like Singer and Regan, who attempt to oppose it. He points out the inconsistencies and 'backdoor speciesism' in the positions of Singer and Regan when they draw moral comparisons between animals and humans. "(S)peciesism becomes a basic aspect of biological reality on which the human social condition is founded."[17], Petrinovich concludes.

My Thesis

In this thesis, I examine Petrinovich's claim that human beings are biologically and morally separated from animals of other species. Petrinovich's justification for speciesism rests on his claim that human beings are distinguished from animals in two critical ways. First, the neonate's identity as a member of our biological species initiates an emotional contract between the neonate and the human community, distinguishing it from animals of other species. Secondly, only humans have the requisite capacities for moral agency. Petrinovich supports these claims by showing that attempts made by Singer and Regan to give equal moral status to humans and animals involve both philosophers in inconsistency and, indeed, speciesism.

I do not believe that Petrinovich has shown that speciesism is a morally justified position. I argue first that, in making a

---

[15]Petrinovich, 1999, p 222.
[16]Ibid, p 6.
[17]Ibid, p 220.

moral distinction between the neonate and animals of other species on the basis of the neonate's identity as a member of our biological species, Petrinovich is simply re-asserting the undefended assumption that there is a moral difference between humans and animals. Though animals and humans differ in some respects and not in others, the question is more complex than Petrinovich makes it out to be. The big question: 'What differences logically warrant differential treatment?' remains unanswered. I next bring forward some of the most plausible argumentation, based on findings from animal studies, that challenge Petrinovich's claim that a qualitative difference holds between animals and humans "in terms of cognition, culture, language, and intentionality."[18] Following an examination of Dombrowski's *Babies and Beasts,* I concede that defenders of the AMC, including Singer and Regan, do indeed end in speciesism. I deny, however, that speciesism is either inevitable or justified. Finally, I suggest that speciesism can be opposed through further development of the AMC, in which new findings from animal studies, freed of biases, are taken into account.

Methodology

In this work, I take a pluralistic approach, drawing as much from cognitive science and cognitive ethology as I do from philosophy of mind and animal ethics, in order to provide an argument against Petrinovich's speciesism that is both philosophically and empirically responsible. Speciesism can be neither opposed nor justified, it seems to me, without the rigor of philosophical investigation to determine which characteristics are considered to be morally relevant and empirical study to determine who the bearers of those characteristics are.

Outline

This work is divided into 3 chapters. In chapter 1, I briefly introduce Petrinovich's biologically based moral theory.

---

[18]Petrinovich, 1999, p 166.

According to Petrinovich, the special relationships among members of a given species form and regulate a biologically supported social contract that grounds morality. The social contract "does not extend across species boundaries."[19] I then discuss the first stage of his moral theory-the stage of the *moral patient*, (a notion I examine in chapter 1). He claims that while both human infants and animals of other species are moral patients, from birth humans are morally separated from animals. I identify and challenge 2 of his key claims for the uniqueness of human beings at this stage: birth determines moral status and emotional bonds justify speciesism. In chapter 2, I discuss the second stage of Petrinovich's theory-the stage of the moral agent. Moral agency, Petrinovich claims, is probably unique to humans. I present challenges to his claim that humans alone have the capacities that he stipulates are requisite for moral agency. In chapter 3, I address Petrinovich's defense of speciesism against the charge of bigotry, and his counter charge of inconsistency and speciesism against Singer and Regan. To this end, I examine the AMC in Dombrowski's *Babies and Beasts*. I argue first that, notwithstanding important differences, there are evident parallels between speciesism, racism, and sexism, as defenders of the AMC have drawn out. I concede that defenders of the AMC, nonetheless, end in speciesism, but I deny that speciesism is either inevitable or justified. I first show that in undermining Petrinovich's argument for human uniqueness, I have thereby weakened his claim that the interests of human beings and animals are incommensurate. I then argue that the fact that speciesism is pervasive does not mean that it cannot or should not be otherwise. Finally, I suggest that speciesism can be opposed through continuing development of the AMC by philosophers who incorporate into their argumentation the findings from studies in animal cognition, behavior, cognitive ethology, and neuroethology.

---

[19]Petrinovich, 1999, p 220

Chapter 1 Petrinovich's Biologically Based Speciesism

1.1. Petrinovich's Thesis

Petrinovich begins *Darwinian Dominion* with a clear expression of the thesis that he will be defending in his work, namely, that speciesism "is grounded on a complex bundle of characteristics that only humans possess."[20] Humans, Petrinovich argues, have a complex language, minds capable of appreciating other minds, and the ability from birth to respond to and elicit responses from human caregivers. He defends his thesis through philosophical argumentation and supportive empirical evidence. Gathering up the strands of his argument, stated throughout his book, yields a slightly different argument than initially suggested by his thesis, however. Rather that claiming, as his thesis suggests, that *all* humans possess the characteristics that he indicates set them apart from animals, he is presenting "(a) biologically based theory of morality (that) emphasizes the importance of life history stages."[21] A more accurate formulation of his argument can be stated as follows:

Stage 1-At birth, the human neonate is identified as a member of our biological species, whereupon the status of personhood is conferred upon it.[22] At this stage, the neonate has the standing of a moral patient but is distinguished from moral patients of other species by the emotional bonds that are formed between the neonate and members of its community. These emotional bonds are the basis for the emotional social contract that is struck between the neonate and the community. The emotional contract increases the likelihood of survival and reproductive success of the neonate.
Stage 2-The next critical stage is when the individual moves from the status of moral patient to that of moral agent with full moral standing in the community. At this stage, the

---

[20]Petrinovich, 1999, p 3.
[21]Ibid, p 63.
[22]Ibid, pp 66, 122.

individual has uniquely human cognitive characteristics, including the ability to understand duties, obligations, and causality, as well as having a ToM (theory of mind)*, which depends upon the possession of language.[23]

The biological basis for speciesism, then, according to Petrinovich, is the emotional relationship between persons, which begins with the recognition of the neonate as a member of its particular species. In the case of humans, the emotional bonding between the neonate and the human community is "subsequently elaborated by the abstract, rational structures humans build."[24] From an evolutionary standpoint, the emotional contract, which begins at birth, increases the likelihood of survival and reproductive success of each member of the species. Favoritism for members of one's species, therefore, is justified and "speciesism becomes a basic aspect of biological reality on which the human social condition is founded."[25]

According to Petrinovich, then, survival and reproductive success are basic moral values* that necessitate and justify favoritism for one's species. Animals, no less than humans, Petrinovich thinks, are speciesists in order to ensure the continuance of their species line. Although animals, like human infants, are considered to be 'moral patients', and 'persons' within their own species, they are not persons within the human community, and as such, their interests cannot be considered comparable with those of humans.[26] The moral distinction Petrinovich draws between animal and human persons is puzzling. While it is trivially true that animals are not human persons, Petrinovich does not show how that entails that the welfare interests of animals and humans are

---

*I will discuss ToM in chapter 2.
[23]Petrinovich, 1999, p 6.
[24]Ibid, p 221.
[25]Ibid, p 220.
*I simply note here, without further discussion, that objections can be made to Petrinovich's claim that reproductive success is a universal and primary moral value. The proliferation of birth control methods and public policy promoting population reduction, for example, at least suggest a differing view.
[26]Petrinovich, p 3.

incommensurate. Though Petrinovich is unique, in that, unlike many opponents to animal rights[27], he recognizes animals as persons with interests within their species, the status of personhood as applied to animals confers on animals none of the rights and privileges of human persons. Because only the interests of human persons are granted protection, it is apparent that only humans are persons in a morally significant sense. It is my contention, therefore, that Petrinovich is merely re-asserting the commonly held assumption that all and only humans are persons, an assumption that he does not adequately defend.

1.2. The Moral Patient-The Emotional Argument

In this chapter, I discuss Stage 1 of Petrinovich's moral theory-the stage of the moral patient. Petrinovich claims that birth confers personhood on the neonate, which both distinguishes it from moral patients of other species and initiates an emotional bond with its caregivers, ensuring its survival. Though these claims overlap, I tease apart what is specific to each and examine it more closely under the scrutiny of philosophical and empirical investigation. I show that each claim is in need of a stronger defense than Petrinovich gives it.

Moral Patients

Before proceeding with my discussion, I think it is necessary to examine in closer detail how the term *moral patient* is understood by Petrinovich. Petrinovich does not specifically stipulate a criterion that must be met to qualify as a moral patient. In the opening chapter of *Darwinian Dominion*, Petrinovich simply says:

> (Animals), as are human infants, are classed by philosophers as moral patients, and as such are due respect and care for their basic needs. However, by no stretch of the imagination can their welfare interests be

[27] Dombrowski, pp 113-40. See particularly Dombrowski's discussion about Leahy and Carruthers.

considered comparable with those of members of our species.[28]

Because he elaborates no further, his statement suggests to me that he is aware of the notion of *moral patient* as provided by philosophers. Because Petrinovich engages Regan specifically, one initially supposes that he takes Regan's meaning, and thus means what Regan means. For that reason, I outline Regan's position on moral patiency here.

Regan's Moral Patients

Moral patients, according to Regan, are individuals who lack the necessary capacities to act in ways in which they can be held morally accountable. Because moral patients are unable to either formulate or intentionally act from moral principles, they can do neither right nor wrong. That is, moral patients cannot be praised nor blamed for their actions since they are unable to understand the meaning of acting morally. As a consequence, the relationship between moral patients and moral agents (who have the requisite understanding and capabilities and thus can be held morally responsible) is not reciprocal. Regan points out, for example, that attending to the needs of a senile person is expected of a moral agent, whether or not the senile person, (who is a moral patient) "can do right any longer."[29]

Among moral patients there are individual differences that are relevant in determining their moral status. An important distinction that Regan makes is between individuals who are conscious and sentient but lack other mental abilities and individuals who are conscious, sentient, and possess other cognitive and volitional capacities. The former can experience pleasure and pain while the latter have a much wider spectrum of experiences, including having beliefs, desires, a sense of the future, an emotional life, and a sense of psychophysical identify over time. These latter individuals meet the *subject of a life* criterion that is the basis for Regan's claim that

---

[28]Petrinovich, 1999, p 3.
[29]Regan, 1983, p 154.

these individuals have inherent value.[30] Individuals who are classed as human moral patients include human infants, young children, and the mentally disabled. Animals from many species qualify as moral patients, as well, according to Regan's criteria. Though some animals, like some humans, can only experience pleasure and pain, others are capable of having a broad range of experiences.[31]

The distinction that Regan makes between moral patients provides a guide for addressing questions concerning the appropriate treatment of individual moral patients. An individual who has no preferences cannot benefit from being given choices, but if she is sentient she can benefit by having her interest in not experiencing pain taken into consideration. This is true whether the individual is a human or an animal.

Birth Determines Moral Status

Although Petrinovich incorporates the term *moral patient* into his moral theory, he uses it very differently than Regan. He agrees with Regan that moral patients lack abilities that make them morally accountable. Where Regan distinguishes between moral patients according to their individual capacities for having certain experiences, however, Petrinovich distinguishes between moral patients according to their species membership. Human moral patients, including neonates, infants, mental defectives and the senile, are distinguished from moral patients of all other species. "The reason for this division", Petrinovich says, "is to point up the critical nature of personhood."[32] According to Petrinovich, from the moment of its birth, the neonate is given the status of personhood, which separates it morally from moral patients of other species. As Petrinovich says, "I believe that the standing of personhood is achieved at birth...It is at this point that a biologically mandated social contract is struck between the

---

[30]Regan, 1983, p 243.
[31]Ibid, pp 152-54.
[32]Petrinovich, 1999, p 55.

neonate and members of that particular species community."[33] According to Petrinovich, then, all moral patients, whether animal or human, are *persons* by virtue of having undergone birth.

Persons

Birth is the single necessary and sufficient condition for being a person in Petrinovich's moral system. Though animal and human moral patients are both recognized as persons, the moral standing they have is relative to the species they belong to. The status of personhood that is conferred upon the human neonate, for example, is exclusive to the human species. For this reason, though animals may be persons within their own species, they do not share the rights and privileges that are granted to human beings who have the standing of personhood. All and only neonates who are born of human parents are persons within the human community, and as such, are morally distinct from persons of all other species. The "welfare interests (of animals, therefore, cannot) be considered comparable with those of members of our species[34], according to Petrinovich. "(W)hen push comes to shove, the interests of members of our species should triumph over comparable interests of members of other species."[35] For Petrinovich, then, persons are not equal in moral standing.

All Persons Are Not Equal

The status of personhood conferred on the human neonate not only sets it apart from persons of other species, but gives the neonate a special status in which its interests take precedence over the like interests of other persons. While animals may be persons in the minimal sense that their basic needs must be respected, only humans are persons in any real and morally significant sense. The notion of 'person' when applied to animals is understood differently than when it is applied to humans, in Petrinovich's moral theory. Though this

---

[33]Petrinovich, 1999, p 55.
[34]Ibid, p 3.
[35]Ibid, p 3.

may raise an eyebrow among moral philosophers, such as Paul Taylor[36] and Joel Feinberg[37], who wrestle with questions concerning the concept of *person* and the appropriate criterion for *personhood,* I suspect that it comes as no surprise to many people, including moral philosophers in their non-philosophical moments. Though it is not unusual, for example, to hear of a child spoken of as a 'nice little person', rarely does one hear it said of a grizzly or a pet dog that she is 'a good person', even though on some conceptions of 'person', the dog and grizzly may meet the criterion while the child does not. The question to be asked is whether Petrinovich has indeed identified what it takes to be a person, as reflected in our common parlance and practices, or whether further philosophical argumentation is required to justify his claim. In what follows I show that this privileging of human persons on the basis of their species membership is merely a re-assertion of the undefended assumption that humans are morally separated from other animals simply because they are humans.

Private/Public Distinction

As stated earlier, the birth of the human neonate is a critical event "that signals the onset of personhood"[38] according to Petrinovich. Human neonates are morally distinguished not only from animals of other species but from human fetuses, as well. Drawing a moral distinction between unborn and newborn humans seems to me to be at odds with the importance that Petrinovich places on biological species membership, raising the question of why birth carries the moral weight it does for Petrinovich.

---

[36]Taylor, Paul. *Respect for Nature.* Princeton: Princeton University Press, 1986. According to Taylor, a person is "a center of autonomous choice and valuation." p 33.

[37]Feinberg, Joel. 'Abortion' in *Matters of Life and Death.* 2nd. ed. ed. Tom Regan, New York: Random House, 1986. According to Feinberg, "persons are...conscious, have a concept and awareness of themselves, are capable of experiencing emotions, can plan...and act on their plans, and can feel pleasure and pain." pp 261-62. Feinberg's *person* is similar to Regan's *subject of a life.*

[38]Petrinovich, 1999, p 65.

Birth is significant, Petrinovich argues, because it is through birth that the fetus, whose existence is private and anonymous, is for the first time publicly recognized as an individuated member of the human species. Its emergence into the public domain strikes the social contract between the neonate and the human community. Birth is significant, not in itself, it seems, but as the means by which the fetus is bought out of privacy into the public domain. There is for Petrinovich, then, a moral difference between experiences that are private and those that are public. Indeed, Petrinovich makes it plain that he thinks that public standing is essential in conferring personhood on the human neonate. According to Petrinovich, "(m)orality is essentially interpersonal."[39] From birth, but not before, the individual is able to respond to and elicit emotional responses from human caregivers.

Petrinovich's private/public distinction is challenged by R. J. Richards, who argues that through fetal kicking and technological detection, the presence of the fetus may, in fact, be known and cared about by others besides its mother.[40] The experience of the fetus may not, therefore, be as private as Petrinovich would have it. Curiously, though Petrinovich notes Richards' objection, he offers no defense against the objection. He could argue, in keeping with his earlier claims, that there is a difference between *knowing of* the presence of a fetus and being *in the presence* of *this individual* neonate. [41] It is also available to him to argue that, even though the father, relatives, and even the obstetrician may feel an emotional bond with *this particular* fetus, because the fetus cannot respond to them, there is no relational contact. He says instead that he may be overstating the case by claiming that the mother's interests always trump those of the fetus.[42] Petrinovich's response calls for explanation. His theory of personhood commits him to the position of giving precedence to

---

[39]Petrinovich, 1999, p 68.
[40]Ibid, p 65.
[41]Ibid, p 65.
[42]Ibid, p 66.

the mother's interests. Petrinovich stresses the interpersonal and public nature of morality. Because only individuals with public standing are persons, the mother, but not the fetus, is a person. As a person, the mother has rights that are not extended to the fetus. As a recognized member of the human community, the mother is entitled to having her welfare interest and rights protected. The same is not true of the fetus. It is not enough, therefore, to simply state that the mother's interests do not always trump those of her fetus. Petrinovich must explain why exceptions may be allowed, such that the interest of the fetus take precedence over those of its mother. Could not this allow exceptions to be made in the case of the interests of animals, as well?

Recognition As A Human

The distinction between those who are recognized as human beings and those who are not is important in Petrinovich's moral theory. As mentioned in the previous section, because the experiences of the fetus are private, according to Petrinovich, the human fetus is not yet a recognized member of the human species. Birth is the means by which the human neonate moves from it anonymous and private existence as a fetus to the attainment of public standing. Public standing is critical to the neonate's status as a person within the human community. The experiences of postnatal animals of other species obviously are not private in the way those of a human fetus are, yet like the human fetus, animals are morally distinguished from all human beings, who are born. As Petrinovich states: "(T)he human neonate is moved to a different status from that of moral patients of other species because it is, for the first time, recognized as an individuated member of the human species."[43]

The question to be asked, I think, is whether moral standing depends entirely on whether or not one is recognized as a human being, or whether individual characteristics play a role

[43]Petrinovich, 1999, p 63.

in the determination. Part of the answer is found in chapter 5 of his book in which Petrinovich discusses fetal development. He describes how the neonate comes into the world, not as an empty slate, but with sensory and motor capacities that tend to elicit nurturant responses from adult caregivers.[44] Though there are no fundamental internal differences between a fetus and a neonate at the same developmental stage, there is a qualitative difference. The qualitative difference in moral standing between the fetus and neonate depends entirely on the recognition by others that the neonate is an individual member of the human species. The question of whether individual characteristics play a role in moral standing is answered more directly in Petrinovich's discussion about the interpersonal nature of morality.

Morality Is Interpersonal

Petrinovich makes it clear that he thinks that morality should be considered from an external rather than an internal perspective. In developing his own moral position, Petrinovich draws from the ethical theory developed by moral philosopher, Loren Lomasky.[45] "The advantage of the external view is that it stresses the interaction of an individual with members of the social community within which it is imbedded: Morality is essentially interpersonal."[46] Focusing on the internal properties of individuals creates difficult problems with moral theories, Petrinovich thinks. When social interactions are not emphasized, Petrinovich points out, appeals must be made to sanctity of life or the developing sentience of the organism. Where theological grounds are not accepted, the criterion of sanctity cannot be used in moral deliberation. The problem with the appeal to sentience, Petrinovich thinks, is that:

> It is difficult to apply neurophysiological or psychological criteria consistently to give moral standing to human infants early enough without arbitrarily

---

[44]Petrinovich, 1999, p 124.
[45]Lomasky, L. E. *Persons, Rights, and the Moral Community.* New York: Oxford University Press, 1987.
[46]Petrinovich, 1999, p 68.

> excluding animals of other species and decertifying comatose humans.[47]

It is not the internal characteristics possessed by the human fetus or by animals of other species, then, that determine their moral status. It is, rather, that neither is a recognized member of the human species.

Human Emotional Responses

Petrinovich would argue that certain characteristics are indeed important in determining moral status, and they are not merely biological as I suggest. The characteristics that make a moral difference at this stage are those that facilitate emotional bonding between neonate and adult caregivers. What distinguishes humans from animals is that "the infant displays specifically human emotional responses."[48] Smiling and crying with tears are among the examples he gives in support of his claim.[49] Though smiling and tears can move us, Petrinovich does not show why these expressions carry greater moral weight at this stage than those we share with other animals. A newborn's grasp on its caregiver's finger or hair, like that of an infant gorilla on its mother, may establish as equally profound emotional bonds between them, but have less moral significance. This seems odd. Further, it simply is not true that all human neonates are able to respond emotionally to their caregivers, nor for that matter, elicit responses from them. Without argument, Petrinovich simply says that moral standing is extended to the impaired neonate because "the child is recognizably one of us."[50] The question is, *how* is it recognizably one of us? If internal properties are morally irrelevant and it cannot display uniquely human emotional responses, it is distinguished from other animals solely by its recognizable human form.

Summary

---

[47] Petrinovich, 1999, p 68.
[48] Ibid, p 71.
[49] Ibid, pp 137-38.
[50] Ibid, p 70.

While I grant that emotional bonding plays an important role in Petrinovich's moral theory, (which I explore further in the next section), recognition as a human, alone, I contend, does the work for him of determining moral status. As Petrinovich says: "(The neonate's) terrestrial appearance influences and determines the important qualitative change in the moral standing between it and fetus"[51] (and I add), even though no fundamental internal characteristic distinguishes neonate from fetus. While birth changes the status of the human fetus, animals, of course, are at no time recognized as members of the human species, and on this basis alone, are excluded from equal moral consideration with human beings. This suggests that Petrinovich presupposes what he claims to prove, namely, that animals and humans are morally separated.

1.3. Emotional Bonds Justify Speciesism

As I touched on in section 1.2., emotional relations between members of the human species are the biological basis for speciesism, according to Petrinovich. The emotional bond between the neonate and it s caregiver initiates a social contract between the neonate and the human community, increasing its chances of survival and reproductive success. Petrinovich says:

> The biologically crucial unit of reproducing species lines embodies qualities that have moral relevance...such as the tendency to favor family members, kin, neighbors, community members, and members of one's own species.[52]

By making emotional bonds between humans morally significant, Petrinovich thinks that he can ensure that all humans are morally distinguished from animals.

Hume's Challenge

While I am sympathetic to Petrinovich' attempt to ground ethics in biological evolution, his attribution of moral relevance to the tendency to favor members of our species, I think, must meet the challenge posed by David Hume, who says:

---

[51] Petrinovich, 1999, p 66.
[52] Ibid, p 217.

> In every system of morality...the author proceeds in the ordinary way of reasoning...when of a sudden instead of the usual copulations of propositions *is* or *is not*, I meet with no proposition that is not connected with an *ought* or *ought not*...For as this *ought* or *ought not* expresses some new relation or affirmation, tis necessary that it should be observed and explained[53]

Hume's insight has been labeled 'the naturalistic fallacy' by evolutionary ethicists to refer to the logical error of deriving a moral judgment (an *ought* statement) from a factual claim (an *is* statement).[54] Applied to Petrinovich's moral theory, the fallacy can be formally stated as: we *are* biologically disposed to favor members of our species, therefore we *ought* to favor them. I turn now to examine whether Petrinovich has avoided the naturalistic fallacy.

Motives and Consequences in Morality

One of the first things I think is important to notice about Petrinovich's theory is that he does not simply claim that, because we tend to favor our species, that is what we ought to do. He prefaces this claim by providing the reasons behind it: the neonate depends on the protection of the community for its survival and reproductive success. Because the human infant requires an extended period of intensive care, Petrinovich argues, moral agents assume duties and responsibilities toward the infant to ensure its welfare.[55] Though Petrinovich does not explicitly discuss the role of motives in his moral theory, his claim that the infant's dependence confers responsibilities on moral agents suggests that moral responsibility is rationally motivated. That is, moral agents are motivated to take responsibility for the infant's welfare interests because of its complete dependence on them for its survival. Also, typically, when the caregiver

---

[53]Hume, David. 1739. *A Treatise of Human Nature*. ed. L.A. Selby-Bigge, Oxford: Oxford University Press, 1888, p 469.

[54]Moore, G. E. 1903 *Principia Ethica*. Cambridge: Cambridge University Press, 1968, p 46. This fallacy was named by G. E. Moore to describe Spencer's error in holding that evolution shows us how we *are* developing and thereby, how we *ought* to develop.

[55]Petrinovich, 1999, p 70.

is a parent, reproductive success depends on progeny continuing the species line.

Motives are important to morality, R.J. Richards argues. Kantian moral philosophy, as well as common sense moral tradition, holds that an action from appropriate motives, and not its consequences, render an act moral.[56] As philosopher Margaret Van de Pitte points out, however, the tendency to favor our species may not be rationally motivated at all. Both parent and child may be 'programmed' to behave in ways that enhance the neonate's chances of survival and reproductive success.[57] It is not clear to me how Petrinovich would respond to Van de Pitte's objection. On one hand, Petrinovich would concur with Van de Pitte that we are biologically predisposed to favor members of our species. On the other hand, implicit in his biologically based moral theory is the idea that moral agents, who are capable of rational deliberation, are motivated by the helplessness of newborn infants to accept responsibility for their well-being. Further, the capacity for rational deliberation, Petrinovich thinks, distinguishes humans from animals. Without the rational deliberation component, humans would be no different than animals. Animals are as reproductively successful as we are without the need of rational deliberation.

Petrinovich incorporates elements of consequentialism into his moral theory, as well. That is, according to Petrinovich, favoring members of our species has the desired consequence of ensuring the protection of the neonate. Petrinovich, in fact, expressly states that he endorses a pluralistic moral theory[58] in which, not only utilitarian considerations, but elements of contractualism are taken into account. A pluralistic moral position, including consideration of both motives and consequences, gives Petrinovich's theory an intentional component that rescues it from Hume's charge.

---

[56]Richards, Robert J. 'A Defense of Evolutionary Ethics.' in *Biology and Philosophy*. 1. 1986: 277.
[57]Van de Pitte, Margaret. Personal communication, April 18, 2002.
[58]Petrinovich, 1999, p 6.

Moral Deliberation

Moral deliberation is critical to Petrinovich's position to circumvent problems that are inherent in evolutionary ethical positions. Among the problems Petrinovich discusses is xenophobia. Our tendency to favor our kin and neighbors, (as I discussed in the previous section), has the desired consequence that newborn infants are more likely to be cared for in their vulnerable and dependent condition. Conversely, "favoring kin and neighbors can promote xenophobia with its distrust of and harm to strangers."[59] Petrinovich notes the concerns expressed by philosopher James Fetzer, who pointed out that preference for kin has led to policies with severe consequences for outsiders.[60] A similar problem, not discussed by Petrinovich but pointed out by Alan Gewirth, concerns our ability to distinguish moral from immoral acts. Just as we have an evolved tendency to act altruistically, so too, we have aggressive and murderous impulses. Because both are due to evolutionary processes, Gewirth points out, how do we recognize and approve of moral behavior by appeal to evolutionary causes alone?[61]

Petrinovich argues that total reliance is not placed on "evolutionary currency alone."[62] As moral agents we are capable of rational deliberation which allows us to make moral decisions. Our ability to act rationally and freely in ways that respect the welfare of others puts a constraint on evolutionary forces, Petrinovich argues. Petrinovich's appeal to our capacity for moral deliberation addresses a further problem that inheres in evolutionary ethics, genetic determinism. Briefly stated, genetic determinism, according to Petrinovich, is taken to mean that because traits we have are determined by our genetic material, they are unchangeable. Our actions are genetically determined, therefore, rather than

---

[59]Petrinovich, 1999, p 238.

[60]Ibid, p 237. (refers to Fetzer, J. H. 'Ethics and Evolution.' in ed. J. Hurd *Investigating the Biological Foundations of Human Morality.* Lewiston, NY.: Edwin Mellen Press, 1996, pp 223-42.)

[61]Richards, Robert J. 'Justification Through Biological Faith' in *Biology and Philosophy.* 1. 1986: 341-342.

[62]Petrinovich, 1999, p 238.

resulting from free will.[63] Petrinovich makes it clear that through voluntary and rational decision making, we, as moral agents, are able to decide moral issues. We are not merely driven by evolutionary forces. But, then, Alan Gewirth comments, "The evolutionary explanation seems superfluous if an *a priori* rational account can also be given."[64] I add that if rational deliberation can overturn our biological tendencies, why stop at xenophobia? Why not speciesism? What further argument has Petrinovich offered to support speciesism?

Empirical Support

Petrinovich would respond that speciesism is further supported through empirical studies, showing that favoritism for one's species is reflected in human moral intuitions.[65] In support of his claim that favoritism for our species can be generalized across human cultures, Petrinovich notes that these empirical studies were carried out with University students from the U.S. and Taiwan. Students from both Eastern and Western religious backgrounds were represented.[66] Not represented, of course, would be anyone who was not a University student from the U.S. or Taiwan. Members of Hinduism, Buddhism, and Jainism from India who strictly practice *Ahisma*[67], the doctrine of non-injury to all living beings, would not be represented in his studies. Also not included would be a growing number of people who have taken a radical stand in defending animals, either privately or in union with other like-minded people within one of the increasingly prolific animal rights groups across the world.[68]

The appeal to common sense moral judgments, as necessary as it is to establish a moral position, R.J. Richards warns, may

---

[63]Petrinovich, Lewis. *Human Evolution, Reproduction, and Morality.* Cambridge: MIT Press, 1998, pp 112-16.
[64]Richards, Robert J. 'Justification Through Biological Faith' in *Biology and Philosophy.* 1986:342.
[65]Petrinovich, 1999, p 27.
[66]Ibid, pp 168-74.
[67]Schmidt-Raghaven, Maithili. 'Animal Liberation and Ahisma.' eds. Ninian Smart and Shivesh Thakur in *Ethical and Political Dilemmas of Modern India.* Basingstoke: The Macmillan Press, 1993, pp 60-81.
[68]Stallwood, Kim W. ed. *Speaking Out For Animals.* New York: Lantern Books, 2001.

be degenerately relativistic.[69] Feyerabend makes a similar objection. He warns that "a practice may be popular for the wrong reasons."[70] He says that a practice can appear to be objective because "reference to the group that profits from the use of others has been omitted."[71] In his paper 'The Categorization of Behavior', Fentress, interprets Feyerabend as meaning that "by consensus we can achieve an "objectivity" that reflects little more than unanimity in bias."[72] William Hughes goes so far as to say that unanimity (in moral judgment) projects a society of automatons.[73] Petrinovich, himself, acknowledges that infanticide, for example, is acceptable in some cultures, even though it is intuitively unacceptable in ours, but simply says that infanticide is the result of reasoned deliberation in the culture that approves of it.[74] I think it is fair to say that human moral intuitions can perpetuate an unjust moral system as often as one that is just.

Biological Species

Finally, the moral relevance Petrinovich ascribes to emotional bonding between members of the human species is predicated on his understanding of the concept of species. According to Petrinovich, "the human species is a biological entity possessing special characteristics. Biological species are basic units of nature, and are critical to evolution."[75] "The species concept is basic to biology", Petrinovich says, "because it focuses on actions of interbreeding individuals sharing characteristics that permit them to adapt to the demands of their environment."[76] Characteristics that hold the social community together are of particular importance because they increase the chances of reproductive success of the

---

[69]Richards, Robert J. 'A Defense of Evolutionary Ethics' in *Biology and Philosophy*. 1986: 284.
[70]Feyerabend, Paul. *Against Method*. Atlantic Highlands, NJ: Humanities Press, 1975, p 241.
[71]Ibid, p 246.
[72]Fentress, J.C. 'The Categorization of Behavior' in *Interpretation and Explanation in the Study of Animal Behavior*. Vol. 1. eds. Marc Beckoff and Dale Jamieson. Boulder: Westview Press, 1990, p 11.
[73]Richards, Robert J. 'Justification Through Biological Faith' in *Btology and Philosophy*. 1986: 344.
[74]Petrinovich, 1999, p 56.
[75]Ibid, p 51.
[76]Ibid, p 217.

species. Emotional bonding between members of the human species is morally significant, therefore, in order to hold the community together to continue the species line.

The Concept of Species

As Elliot Sober points out, however, not all biologists accept the *biological species concept* adopted by Petrinovich.[77] Ehrlich and Raven[78] and Van Valen[79] hold the *ecological species concept* in which "commonly recognized species are sometimes not individuated by consideration of gene flow."[80] Ehrlich and Raven and Van Valen argue that many commonly recognized sexual species have subpopulations between them in which there is no genetic exchange. Further, many species routinely form interspecific hybrids in the wild. Species of North American oaks and Hawaiian *Drosophilia* are among the examples they cite in support of their claim.[81] According to Raven and Van Valen, a species is made up of organisms that are similar to each other in virtue of a common selection regime and live in the same adaptive zone.[82] Sokal and Crovello think that the concept of reproductive isolation is a biased description because it is 'theoretically loaded'. By 'theoretically loaded', they mean that, in theory, species may be described as interbreeding individuals, but in practice "(b)iologists typically base their judgments about species membership on the phenotypic characteristics of organisms"[83] and not on whether they interbreed. Sokal and Crovello hold the *phenetic species concept,* which is the idea that species are groups of organisms with a great deal of overall similarity. "The phenetic concept holds that there is nothing special about species as opposed to other categories. "[84] That is, "(t)he

---

[77]Sober, Elliot. *Philosophy of Biology.* Boulder: Westview Press, 1993, pp 156-58.
[78]Ibid, p 156. (refers to Ehrlich, P. and Raven, R. 'Differentiation in Populations.' in *Science* 165. 1969:1228-1232.)
[79]Ibid, p 156. (refers to Van Valen, L. 'Ecological Species, Multispecies, and Oaks.' in *Taxon.* 25. 1976: 233-239.)
[80]Sober, p 157.
[81]Ibid, p 156.
[82]Ibid, p 157.
[83]Ibid, p 157.
[84]Ibid, p 158. (refers to: Sokal, R. and Crovello, T. 'The Biological Species Concept-a Critical Evaluation.' in *American Naturalist.* 104. 1970: 127-153.)

organisms in a subspecific variety are more similar to each than those in a species, and the organisms in a genus will be less similar to each other than those in a single species are."[85] Sober is not arguing that one concept of species is preferable to another. In fact, he draws out problems with each of the concepts of species that have been suggested. Sober is simply warning us that the idea that a single species concept fits all biological contexts should not be assumed dogmatically.[86]

A similar point is made by Rosemary Rodd who argues, with the support of anthropological studies:

> It is arguable that an objective classification system would place *Gorilla, Pan,* and *Homo* together in the subfamily Homininae...(at present *Gorilla, Pan,* and *Pongo* are lumped together in the family Pongidae while *Homo* is given a separate family, the Hominidae).[87]

On the basis of findings from these studies, Rodd argues:

> (T)here is not one living species of 'man' which may be contrasted with 'animal' species, but four (*Homo*, two species of *Pan*, and *Gorilla*), or perhaps five if we consider that the orang's membership of the Hominidae is a sufficient qualification.[88]

1.4. Conclusion

I conclude that Petrinovich has not provided a biological justification for showing favoritism for our species. Petrinovich, in claiming that personhood is conferred on the human neonate from the moment it is recognized as a member of the human species, is simply begging the question by equating 'person' with 'human', after giving an earlier definition of 'person' in which he does not. Petrinovich must provide an

---

[85]Sober, p 158.
[86]Ibid, p 158.
[87]Rodd, Rosemary. *Biology, Ethics, and Animals.* Oxford: Clarendon Press, 1990, p 35. (refers to Dene, Howard T., Goodman, Morris, and Prychodko, William. 'Immunodiffusion Evidence on Primate Phylogeny.' in *Molecular Anthropology.* eds. M. Goodman et al. New York: Plenum Press, 1976, pp 171-95.)
[88]Rodd, p 35.

argument that shows why being a human confers on an individual moral status that differs from that of individuals of other species. Though admittedly, Petrinovich acknowledges animals of others species as persons, the designation of 'person' as applied to animals merely allows them respect for their basic needs. Further, even this minimal consideration of the interests of animals holds only when it does not conflict with human interests. Animals share none of the rights and privileges conferred on human persons.

Petrinovich's justification for making a moral distinction between humans and animals is the biologically based emotional contract between members of the human species. Our biological tendency to favor members of our species is morally justified, Petrinovich thinks, because emotional bonds between the neonate and other humans are critical to the neonate's survival and reproductive success. Petrinovich simply assumes, however, that all neonates enter into emotional contracts with their caregivers. He does not sufficiently address the problem of those humans who can neither respond to nor elicit emotional responses from others. Further, as I have argued, if we are not driven by our biology but have the capacity for moral deliberation, we cannot justify favoritism for those similar to us on the grounds that we have the biological tendency to do so. Finally, the concept of species as a reproductive entity, upon which Petrinovich justifies favoritism for our species, is simply one way among others of categorizing individuals. Petrinovich has not presented a convincing argument showing that the biological species concept, that he has adopted, is better able to capture the meaning of 'species' than any such proposed concept. As Rodd points out, "(m)odern research into genetics has already made the rigid boundaries between species appear less substantial than they were."[89]

---

[89]Rodd, p 39.

Chapter 2 The Moral Agent-The Cognitive Argument

2.1. Petrinovich's Thesis

Early in his book, Petrinovich states that "it can and will be held that the differences between our minds and those of other species create a wide enough gulf to make a moral difference."[90] The moral difference Petrinovich is referring to is that between moral patient and moral agent. The exclusion of animals from moral agency is based on Petrinovich's belief that a "chasm (exists) between humans and other species in terms of cognition, culture, language, and intentionality."[91] It seems that Petrinovich needs to show, therefore, that animals lack these abilities rather than possess them in inferior degree. While I recognize that there are important differences between animals and humans, I do not think a 'chasm' separates the capacities of animals and humans. On the contrary, recent studies* in animal cognition, behavior, and neurobiology support Darwin's argument for the continuity of mental experience between animals and humans.[92] In what follows, I show that the two key abilities (having language and a theory of mind) that Petrinovich identifies as necessary for moral agency may not be found exclusively in humans.

2.2. Language

Petrinovich argues that, though the absolute difference between humans and other primates in DNA structure is small (1.6% in chimpanzees, 2.3% in gorillas) it is responsible for critical qualitative cognitive differences. The human capacity for complex cooperation and communication makes us dissimilar to other animals.[93] The ability of chimpanzees to use human communication systems, even after extensive training, is incomparable to the spontaneous acquisition of language by

---

[90] Petrinovich, 1999, p 19.
[91] Ibid, p 166.
*Because of the number of studies cited, each is documented as I discuss it in this work.
[92] Darwin, Charles. *The Descent of Man and Selection in Relation to Sex.* 1871 repr. New York: Modern Library.
[93] Petrinovich, 1999, p 51.

humans, and is, therefore, morally uninteresting, according to Petrinovich. Human language alone permits the phrasing and understanding of moral principles. Language, finally, may be a human biological specialization, Petrinovich suggests, following Bickerton[94], who claims that no evolutionary evidence supports the notion that language has developed gradually.[95]

Qualitative Difference?

I do not question Petrinovich's claim that even a small difference in genetic material can make a qualitative difference between one organism and another. A qualitative difference just means a difference in the kind of thing something is. Petrinovich is claiming that humans are different in kind from animals because the human capacity for language, culture, cognition, and intentionality differs from that of animals to such an extent that a chasm exists between them.[96] He must, therefore, show how the cognition of a human is not simply of a higher degree than animal cognition but of a different kind altogether. The same, of course, holds for language, culture, and intentionality. Aware of the requirement, Petrinovich states first that the capacity for complex cooperation and communication that characterize humans make us dissimilar to animals. The question that comes immediately to mind is, how complex must the cooperation and communication be to count as qualitatively different? The question itself suggests that complexity is something that admits of degrees. It may well be that when communication and cooperation reach a certain threshold in complexity they become something new. Where, then, should the line be drawn between communication that is not quite complex enough and communication and cooperation that is? Petrinovich draws the line between humans and all other animals. The question now becomes, how does he justify the line he draws?

---

[94]Bickerton, Derek. *Language and Species*. Chicago: University of Chicago Press, 1990, pp 171-74.
[95]Petrinovich, 1999, pp 218-19.
[96]Ibid, p 166.

Petrinovich uses the analogy of computer memory to make his point that a qualitative difference holds between humans and animals. A computer with a large number of memory units is capable of solving, not only larger problems of the same kind as a computer with a small amount of memory, but it can solve problems of a totally different kind.[97] If it is the case that the communication of humans is, in the same way, different in kind from that of animals, then why keep the same terminology? That is, if human communication is of such complexity that it is something totally different from that of animals, why call them both communication? By way of analogy, a child who begins to use real words is no longer said to 'babble'. In recognition that a child's comprehension and production of words is not simply 'meaningful babble', but something altogether different, we drop the term 'babble' when discussing the child's first words.

Primate Language Studies

There is no doubt that we have greater facility with language than other animals. The question remains, however, whether this facility demonstrates a qualitative difference between us. To highlight the difference, Petrinovich contrasts the spontaneous ease with which humans acquire language with the intensive and largely unproductive training of chimpanzees. He is careful to point out that chimpanzees are our closest phylogenetic relatives, implying that what can be said about the gap between the abilities of chimpanzees and humans applies even more strongly to animals more distantly related. Petrinovich's distinction is called into question, however, by Sue Savage-Rumbaugh who suggests that intensive training may actually interfere with a chimpanzee's ability to communicate in language-like behavior. She discusses the case of Washoe, a common chimpanzee, who acquired the sign 'toothbrush' observationally. Washoe's ability exhibited what Savage-Rumbaugh refers to as 'delayed imitation'. That is, Washoe had not been trained to use the sign 'toothbrush' but had observed

---

[97] Cf. Petrinovich, 1999, 123.

caregivers using them after eating. While looking at toothbrushes in the bathroom later, Washoe produced the sign 'toothbrush' for the first time. "Instead of letting the sign develop spontaneously, however, they forced it into rote behavior to be produced in a specific situation before events could continue", which, according to Savage-Rumbaugh, "reduc(ed) its value as a communicative event."[98] In contrast, seldom, if ever, are human children required to produce a sign before being allowed to engage in certain activities, Savage-Rumbaugh points out.

Kanzi !

An even more striking challenge to Petrinovich's claim is posed by Savage-Rumbaugh's study of pygmy chimpanzees (bonobos). While Savage-Rumbaugh found that Matata, a wild caught bonobo, did not learn referential communication, captive-born bonobos, Kanzi, Mulika, and Panbanisha, acquired large symbol vocabularies. The young bonobos, like children, were exposed to a linguistic community in which they were spoken to, asked questions, and responded to. They were given no training but learned to use the symbols appropriately, simply through observing and listening to their caregivers, just as children acquire language. Without training, Kanzi, "can decode speech into individual words, determine how those function in different and novel communicative settings"[99], "use them spontaneously and appropriately in novel combinations"[100], and can "comprehend sentential relationships."[101] Savage-Rumbaugh concludes that "the language gap between man and ape may

---

[98]Savage-Rumbaugh, Sue and Brakke, Karen E. 'Animal Language: Methodological and Interpretive Issues.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson Boulder: Westview Press, 1990, p 322.

[99]Ibid, p 337. (refers to Savage-Rumbaugh, E.S. 1987. 'A New look at Ape Language: Comprehension of Vocal Speech and Syntax.' in *Nebraska Symposium on Motivation,* 35. *Comparative Perspectives on Modern Psychology.* ed. D. Leger. Lincoln: University of Nebraska Press, 1988, pp 201-55.)

[100]Ibid, p 337. (refers to Greenfield, P.M. and Savage-Rumbaugh, E.S. 'Grammatical Combination in *Pan paniscus:* Processes of Learning and Invention in the Evolution and Development of Language.' in *Language and Intelligence in Monkeys and Apes. Comparative Developmental Perspectives.* eds. S. Parker and K. Gibson. New York: Cambridge University Press, 1990, pp 540-78.)

[101]Ibid, p 337. (refers to Savage-Rumbaugh, E.S. 'Language: Our Erroneous but Cherished Preconceptions.' Invited Lecture. Animal Language Workshop. University of Hawaii at Manoa, 1989.)

result from a difference in information processing capacity and memory, rather than innate linguistic structures."[102]

Neuroethological Studies

Savage-Rumbaugh's claims are given support by recent work in neuroethology. Several studies reveal "remarkable similarities between primate vocal behavior and human speech"[103], according to Ghazanfar and Hauser. An accumulation of data supports the claim that many primates have vocalizations that are functionally referential and not simply reflections of their emotional states. Interestingly, just as humans attend to the referential similarity between words and not simply their acoustic features, such as in the words, 'soda' and 'pop', so too, primates exhibit this capacity.[104] Behavioral studies further show that there is a similarity between humans and primates in neural lateralization for language processing. Because speech perception is usually lateralized to the left temporal lobe, a right ear advantage for speech, and a left ear advantage for non-speech, is an indication of its presence. "Behavioral experiments under laboratory and field conditions reveal that primates also exhibit similar asymmetries in the perception of their vocalizations."[105] Neuroethological studies further suggest that the neural bases for some language behaviors in primates are homologous with human language circuitry.[106]

Communication Comprehension Studies

Another source of resistance to Petrinovich's distinction between animals and humans in their capacity to use human communication systems comes from Louis Herman and Palmer Morrel-Samuels, who are the director and research assistant, respectively, at the Kewalo Basin Marine Lab at the University

---

[102]Savage-Rumbaugh and Brakke, p 338.

[103]Ghazanfar, Asif A. and Hauser, Marc D. 'The Neuroethology of Primate Vocal Communication: Substrates for the Evolution of Speech.' in *Trends in Cognitive Science*. 3. 1999: 378.

[104]Ibid, p 379. (refers to Zuberbuhler, K., Cheney, D.L., and Seyfarth, R.M. 'Conceptual Semantics in a Nonhuman Primate.' in *Journal of Comparative Psychology*. 113. 1999: 33-42.)

[105]Ibid, p 378.

[106]Ibid, p 381 (refers to Bieser, A. and Muller-Preuss, P. 'Auditory Responsive Cortex in the Squirrel Monkey: Neural Responses to Ampliture-Sounds' in *Experimental Brain Research*. 108. 1996: 273-284.)

of Hawaii. Herman and Morrel-Samuels argue, in agreement with Petrinovich, that speech perception and production are likely two different systems with different evolutionary bases.[107] They argue, with the support of a study by Hauser, that just as comprehension of language precedes and exceeds language production in children, so wild vervet monkey exhibit comprehension of social vocalizations and alarm calls before producing them reliably in the appropriate context.[108] Language comprehension studies further give evidence of both semantic and syntactic processing by dolphins. According to Herman and Morrel-Samuels, dolphins are able to understand and answer interrogatives spontaneously on the first occasion they are presented and perform them reliably thereafter. Syntactic rules are not explicitly taught to the dolphins, Herman and Morrel-Samuels claim. The dolphins, rather, acquire an implicit knowledge of the rules through exposure to grammatically correct sequences, analogous with the way children acquire language.[109]

2.3. Summary

In summary, behavioral and neural studies of primates provide considerable evidence of a bio-linguistic substrate of language, according to the researchers I have examined in this work. Language comprehension work with primates and dolphins reveal competencies for language receptive skills, including syntax and semantics. The "massive regimented teaching sequences contrived by humans"[110] that Petrinovich claims is necessary for chimpanzees to acquire even rudimentary linguistic abilities, may actually frustrate their attempts to use human communication systems. Bonobos, dolphins, and

---

[107]Cf. Herman, Louis M. and Morrel-Samuels, Palmer. 'Knowledge Acquisition and Asymmetry Between Language Comprehension and Production: Dolphins and Apes as General Models for Animals.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson, Boulder: Westview Press, 1990, pp 283-312, Petrinovich, 1999, p 149.

[108]Cf. Ibid, p 298 (refers to Hauser, M.D. 'Octogenetic Changes in the Comprehension and Production of Vervet Monkey (*Cercopithecus aethiops)* Vocalizations.' in *Journal of Comparative Psychology.* 103. 1989:149-158.

[109]Ibid, pp 296-99.

[110]Petrinovich, 1999, p 167.

indeed common chimpanzees[111] spontaneously acquire syntax simply by being exposed to language environments, according to Savage-Rumbaugh. Primates and dolphins may not attain to the language sophistication of normal humans, but researchers examined here suggest that, in both English and in symbolic languages, there are parallels between the linguistic abilities of some primates, dolphins, and human children. These studies suggest that the abilities of these animals to communicate are not different in kind from those of humans. Petrinovich is familiar with studies such as these but draws different conclusions from them. Aware of Savage-Rumbaugh's work with bonobos, he simply notes that the spontaneous acquisition of language skills by the bonobos is due to a language saturated environment, and dismisses such studies because they fail to contribute to our understanding of communication systems that have evolved in species-specific environments.

I find Petrinovich's comments evasive. The contrast he draws between the spontaneous language acquisition of children and the laborious training of chimpanzees in primate language studies serves as the main support for his claim that animals and humans differ qualitatively in communicative ability. He simply ignores the fact that English is a second communication system for chimpanzees. Further, when faced with the equally spontaneous bonobos, Petrinovich dismissively attributes their spontaneity to a language saturated environment and expresses reservations about primate language studies. Petrinovich cannot have it both ways-questioning the validity of such studies while helping himself to findings gleaned from them when they support his position More importantly, I think, the language *saturated* environment that the bonobos flourished in is none other than our natural environment.

The Importance of a Language Environment

---

[111] Savage-Rumbaugh, Sue and Lewin, Roger. *Kanzi*. Toronto: John Wiley and Sons, Inc. 1994. This book is replete with studies showing the spontaneous acquisition of language by bonobos and common chimpanzees, that I have had to leave out due to space restrictions.

Because language permeates our lives from the moment of our birth, and perhaps before[112], its influence is not always appreciated. As Savage-Rumbaugh points out:

> The multiskill requirements of word acquisition are not obvious as the normal child acquires language. Indeed, symbol acquisition seems almost effortless to observers. Presumably, a rather lengthy period of comprehension precedes the actual use of any given symbol.[113]

The daily routines of the caregiver-infant interaction are repeated several times over the course of a week or even a day, even in a simple game of peek-a-boo.[114] In early primate language studies, on the other hand, Savage-Rumbaugh points out:

> Chimpanzees were taught to produce words before comprehending them...Consequently, their word usage reflected little more than an associative connection between a displayed referent and a symbol. That is why chimpanzees' signs were referred to as 'tricks'.[115]

The impact that exposure to language has on linguistic development is dramatically shown in the well known case of Genie, a child who was kept from hearing human speech from around age two to thirteen. "After years of training, her lexical and semantic abilities are described as good, though many problems remain in terms of syntax and morphology."[116] That a language environment makes a difference in language development, not only in humans, but in bonobos, chimpanzees, and dolphins, suggests that there is some biological similarity between us in terms of language acquisition. Were there no such similarity, a language environment, no matter how enriching, would make no difference to the linguistic abilities of the bonobos, chimpanzees, dolphins, or , indeed , the child.

---

[112]Berk, Laura E. ed. *Child Development.* 4rth ed. Toronto: Allyn and Bacon, 1997, p 149.
[113]Savage-Rumbaugh, E.S., p 203.
[114]Savage-Rumbaugh and Brakke, p 315.
[115]Savage-Rumbaugh, E.S., p 203.
[116]O'Grady, William and Dobrovolsky, Michael. eds. *Contemporary Linguistic Analysis An Introduction.* Toronto: Copp Clark Pitman Limited, 1992, pp 425-26.

2.4. Petrinovich's Thesis

Petrinovich argues that language itself does not determine moral value, but "supports cognitive structures that grant the status of being a moral agent."[117] According to Petrinovich, "humans quickly acquire a set of communicative and cognitive capacities leading them to develop a theory of mind (ToM) that supports a sense of cause, intentionality, and morality."[118] The ability to mind read the attitude and intentions of others is probably a human emergent, Petrinovich argues.[119] "(T)he status of moral agency involves development of ToM, which is specific to and between humans."[120]

2.5. Theory of Mind

The notion of a theory of mind comes out of the work of philosophers of mind and psychologists to describe the ability to attribute mental states to others and to understand that these mental states may differ from one's own. Philosophers and psychologists use the expressions 'theory of mind' and 'mind reading' interchangeably to describe this ability to attribute mental states to others. At present two dominant approaches to mind reading -*theory theory* and *simulation theory*- are adopted by theorists. According to 'theory theory', mind reading is the ability to form a commonsense theory of behavior. Mental states are attributed to others to explain and predict their behavior. That is, inner, mental states, such as beliefs, desires, and intentions, are thought to cause the observable, external behavior of others. "This common-sense approach to mentalistic explanation is referred to as "folk psychology" by philosophers."[121] The basic idea of 'simulation theory', the rival approach to mind reading, is that one represents another's mental state through taking the perspective of the other. That is, we attribute to others the thoughts and feelings we would experience were we in a similar situation.

---

[117] Petrinovich, 1999, p 219.
[118] Ibid, p 143.
[119] Ibid, p 168.
[120] Ibid, p 166.
[121] Allen, Colin and Beckoff, Marc. *Species of Mind.* Cambridge: MIT Press, 1997, p 64.

The approach to mind reading taken by Petrinovich is 'theory · theory'. "The ToM concept is important because it involves attributes that probably are specific to humans"[122], Petrinovich states. The ToM concept involves having the ability to appreciate mechanical causation, understand goal-directedness, and mind read the attitudes and intentions of others. Understanding cause and goal-directedness are important in the development of morality because they indicate that an individual recognizes the difference between animate and inanimate objects. He or she understands that only objects that are self-propelled are animate and intentional.[123] "The capacity to understand intentions of another person could mean that infants have a ToM".[124] Petrinovich thinks that while some animals may appreciate mechanical causation, and some primates understand goal-directedness, which are both components of the ToM concept, mind reading is a uniquely human ability. In what follows, I show that the capacity to mind read the intentions of others may not be exclusive to humans, as Petrinovich claims.

Intentionality

Of particular interest to the discussion of a theory of mind is the question of the *intentionality* of mental states. The term *intentional* as it is used by contemporary theorists differs in meaning from its common usage as 'purposeful'. The meaning it has is that given to it by Franz Brentano in the 19th century. 'Intentional' in Brentano's sense is '*aboutness*'. That is, mental states have representational or semantic content in that they are directed toward or are *about* some state of affairs. Terms taken from folk psychology , such as beliefs and desires, are intentional in Brentano's sense because to have a belief is to have a belief *about* something.[125] Daniel Dennett refers to this aspect of mental states as the *intentional stance.* He says that "the actions

---

[122]Petrinovich, 1999, p 164.
[123]Ibid, pp 157-58, 161.
[124]Ibid, p 158.
[125]Allen and Beckoff, pp 14-15.

of an individual who exhibits intentionality or aboutness can be explained (or predicted) on the basis of the content of these states."[126] Dennett suggests that intentional attribution is hierarchic in structure. Animals, he thinks, may have 1st-order intentionality but none, other than chimps, perhaps, are capable of 2nd-order intentionality. To illustrate, he says that we may grant that Fido *wants* his supper and *believes* that by begging, he can get his master to feed him, but there is no reason to ascribe to Fido the further *belief* that his begging induces a *belief* in his master that he, Fido want his supper.[127] Petrinovich, in agreement with Dennett, claims that: "(a) first-order intentionalist is a behaviorist-perhaps a clever one-but it does not have a ToM...to generate second-order beliefs (beliefs about the beliefs and mental states of others)."[128] He quotes approvingly Dennett's claim that: "Naked animal brains are no match for the heavily armed and outfitted brains we carry in our heads."[129]

Clever Behaviorists?

The question is, are animals simply clever behaviorists as Petrinovich claims, or do they, too, have a theory of mind? Against Petrinovich, recent research suggests that the ability to attribute mental states to others and predict behavior on the basis of those attributions may well be within the grasp of other species. Where, then, do we look for evidence of this kind of intentionality?

Imitation and Joint Reference

Petrinovich aligns himself with child development theorists who suggest that the capacity to imitate others and engage in joint attention signal a developing theory of mind. The ability to imitate another is important to a developing ToM because "(it) may function to elicit and maintain social interactions

---

[126]Dennett, Daniel, C. *Consciousness Explained.* Boston: Little Brown, 1991, p 76.
[127]Cf. Dennett, Daniel C. *Brainstorms.* Cambridge: MIT Press, 1979, p 274.
[128]Petrinovich, 1999, p 156.
[129]Petrinovich, 1999, p 156. (refers to Dennett, D. C. *Darwin's Dangerous Idea.* New York: Simon and Schuster, 1995, p 391.)

between an infant and other humans."[130] "Infants do not blindly imitate actions (of others)", Petrinovich claims, "but infer what the goal of the action is. Their imitative behavior indicates they understand the intention of the actor, and not just the specific actions performed."[131] Similarly, "the ability to follow an adult's eye gaze...demonstrates the beginning stages of ToM."[132] Following another's gaze allows infants to develop the concept of joint reference. Joint reference means that an individual is attending to the same thing as another. According to Petrinovich, infants understand that direction of gaze and attention provide important hints regarding what other individuals think and feel.[133] Petrinovich adopts Baron-Cohen and Sweetenham's proposal that humans have a mechanism, *the shared attention* mechanism (SAM). [134] The SAM, Baron-Cohen suggests is an important component of having a ToM. Development of the SAM is universal among humans and evolves to guide behavior in uncertainty. When uncertain, the first place to look is in another's eyes.[135]

Petrinovich acknowledges that chimpanzees exposed to human environments engage in imitation and that many primates, including "(b)aboons, macaques, and a number of other Old World monkeys and apes use and react to eye contact, and engage in mutual gazing. Chimps look in the same direction as another chimp"[136] He expresses doubt that primates have a theory of mind, however, because the imitation of chimpanzees is due to human environments. Further, the mutual gazing of primates may not be subjectively understood by them, Petrinovich thinks.[137] Because their gaze monitoring seems more reflexive

---

[130]Petrinovich, 1999, p 153.
[131]Ibid, p 157.
[132]Ibid, p 144.
[133]Ibid, p 170.
[134]Ibid, p 159. (refers to Baron-Cohen, S. and Sweetenham, J. 'The Relationship between SAM and ToMM: Two Hypotheses.' in *Theories of Theory of Mind*. eds. P. Carruthers and P.K. Smith. Cambridge: Cambridge University Press, 1996, pp 158-168.)
[135]Ibid, p 159. (refers to Baron-Cohen, S. 'The Eye Detection Detector (EDD) and the Shared Attention Mechanism (SAM): Two Cases for Evolutionary Psychology.' in *Joint Attention*. eds. C. Moore and P.J. Dunham. Hillsdale, NJ: Erlbaum Associates, 1995b, pp 41-60.)
[136]Petrinovich, 1999, p 172
[137]Ibid, p 171.

than for humans, according to Povinelli and Eddy[138], Petrinovich concludes that SAM is not available to them and they are, therefore, not mind readers.[139] It is not clear, however, how he discerns meaningful gazes from those that are not. When "Panbanisha and (Savage-Rumbaugh) immediately look at each other at the sight of a big cat"[140] or "Bosondjo and Matata seek (her) with their eyes in every unusual occurrence and identify with (her) reaction"[141], how do they differ from a child who searches a parent's face in novel situations? Indeed, how do they differ from Micalen, one of my companion cats, who searches my eyes in unfamiliar surroundings? If the child is said to exhibit the beginning stages of ToM, there seems to be no reason to deny the same of the bonobos or Micalen when they display similar behavior under similar conditions.

2.6. Cognitive Ethology and Cognitive Science

The approach taken by cognitive ethologists and cognitive scientists to the question of intentionality differs from that taken by Petrinovich. Petrinovich notes rightly that having the capacity to communicate one's intentions and understand that others have intentions is important in human interactions. The same, however, can be said of animals, particularly animals in the wild, whose survival depends on having the ability to predict the behavior of predators or prey. Work in cognitive ethology and cognitive science provides support for the view that animals of other species may have the capacity to represent the mental states of others, a capacity called mind reading by cognitive scientists.

Cognitive Ethologists

Cognitive ethologists Colin Allen and Marc Beckoff argue that some of the behaviors displayed by animals do not fit neatly into a behavioristic paradigm. The richness and complexity of the behaviors suggest that these animals may communicate

---

[138]Povinelli, D.J. and Eddy, T.J. 'What Young Chimpanzees Know About Seeing.' in *Monographs of the Society for Research in Child Development.* 61. 3. 1996: 285-300.
[139]Petrinovich, 1999, p 172.
[140]Savage-Rumbaugh and Lewin, p 261.
[141]Ibid, p 106.

intentionally with each other. The particular behaviors Allen and Beckoff focus on are social play and antipredator (vigilance) behavior, as these behaviors occur in a wide range of species.[142]

Analysis of Canid Social Play

Because of Beckoff's extensive work with coyotes, I examine the discussion he and Allen provide on intentionality in the social play of canids. Allen and Beckoff stress that any connection between play and intentionality depends on the account of intentionality adopted. They begin with an examination of play provided by Alexander Rosenberg, who takes the position that play is a form of *pretense* which he associates with 3rd-order intentionality- that is, (a) *believes* that (b) *believes* something about (a's) *desires*. According to Rosenberg, then, when Rover bites Lassie, he (a) *believes* that she (b) *believes* that he (a) just *wants* to play. In intentional terms, Rover bites Lassie with the *intention* of her *recognizing* that his bite *means* that he wants to play with her and is not to be taken seriously.[143] Rosenberg's 3rd-order analysis of *pretense* seems over-inflated relative to Dennett's ordering of intentionality, according to Allen and Beckoff. Dennett's 3rd-order intentionality would require animals to make general inferences from a specific 3rd-order belief. A particular piece of behavior in play, however, may involve pretense without either participant having a general conception of pretense, Allen and Beckoff caution. A more conservative explanation of canid social play would be that the animals may simply detect subtle differences between behavior that is playful and that which is aggressive. There may be, for example, playful and aggressive teeth baring, Allen and Beckoff suggest.[144]

---

[142]Allen and Beckoff, preface xi-xviii.

[143]Rosenberg, Alexander. 'Is there an Evolutionary Biology of Play?' in *Interpretation and Explanation the Study of Animal Behavior*. Vol. 1. eds. Marc Beckoff and Dale Jamieson Boulder: Westview Press, 1990, p 184.

[144]Cf. Allen and Beckoff, p 98.

Intentional Icons

The approach to intentionality favored by Allen and Beckoff is that taken by Ruth Millikan, who introduces the idea of *intentional icons.*[145] In social play, contextual cues, or signals, understood as intentional icons, convey messages *about* the intentions of the participants. Because play involves actions that are used in other contexts, evolved signals function to establish and maintain the context for play. The play bow of canids, for example, has evolved as a signal to invite and maintain play.[146] According to Allen and Beckoff, an analysis of the signals, such as the play bow, suggests that some canids cooperate when they engage in social play, and that cooperation is negotiated by sharing their intentions.[147] The intentional explanation of canid play signals is further strengthened by empirical observations of dogs and coyotes whose bows have not been reciprocated. On the rare occasion that a bow is followed by the signaler being attacked by the recipient, "The soliciting animal's eyes opened widely, its tail dropped, and it rapidly turned away...as if what had happened was totally unexpected and perhaps confusing."[148]

I think Allen and Beckoff have provided a thoughtful analysis of intentionality using Millikan's biofunctional framework. Her idea of 'intentional icons' corresponds neatly to canind play signals, providing an intentional explanation for play in canids and it can be extended to animals of other species who have similarly evolved signals. Further, the idea of 'intentional icons' accords with Rosenberg's claim that an animal's play *signals* have *meaning* that is *recognized* by the recipient. As Rosenberg says, if signals are important in initiating play, they are transmitted because they have 'meaning'-express the desire of the animal to communicate an intention, and they are received and decoded as having these meanings.[149] Finally,

---

[145]Allen and Beckoff, p 95. (refers to Millikan, Ruth G. *Language, Thought, and Other Biological Categories.* Cambridge: MIT Press, 1984, pp 95-113.)
[146]Cf. Allen and Beckoff, pp 98-99.
[147]Cf. Ibid, p 108.
[148]Ibid, p 111.
[149]Rosenberg, p 186.

using Millikan's framework allows the attribution of a very specific 2nd-order intentionality to canid social play and avoids Dennett's requirement that animals have a general concept of 'pretense', Allen and Beckoff argue. "An animal may have very specific cognitive abilities with respect to particular intentional states of other organisms without having the general ability to attribute intentional states to those organisms."[150]

While I think that Millikan's framework has much to recommend it, I have concern that it may provide an incomplete picture of animal intentionality. Allen and Beckoff note the comparison between the notion of an 'intentional icon' and classical ethological notions, such as 'releaser' and 'sign-stimulus'.[151] These latter two notions suggest to me more reflexive behavior than that exhibited in canid social play. 'Releaser' and 'sign-stimulus' call to mind the often cited case of the reflexive attack response of the male stickleback. As ethologist Niko Tinbergen reports, during mating season the belly of the male stickleback turns red. During his courtship behavior, the male stickleback will attack any red object presented to him.[152] Social play, on the other hand, as Allen and Beckoff point out, has a great variety of forms and "the degree of variability can be affected by the ages of the participants, their sexes, their social ranks, their social experience, their energy levels, and their habitat."[153] Allen and Beckoff emphasize, and I think rightly, that Millikan's framework is a useful tool for exploring intentionality but "not necessarily the last word on the matter."[154]

2.7. Deception as Evidence of Intentionality

Cognitive ethologist Donald Griffin suggests that a promising place to look for intentionality is deceptive communication. According to Griffin, the versatility of deceptive behavior may

---

[150] Allen and Beckoff, p 97.
[151] Ibid, p 95.
[152] Tinbergen, N. *The Study of Instinct.* Oxford: Oxford University Press, 1951, pp 89-90.
[153] Allen and Beckoff, p 91.
[154] Ibid, p 107.

provide more suggestive evidence of conscious intention than transmission of accurate information.[155] The customary explanation of distraction displays in birds, for example, has been that the bird is in severe conflict, motivated to both flee and attack or conversely, that the bird is simply hard-wired to simulate injury in the presence of a perceived threat to its young. Both explanations become particularly strained in accounting for the behaviors of piping plovers, a species of shorebird extensively observed by Carolyn Ristau. Were the plovers in chaotic convulsions, the location of the nest would play no significant role, yet Ristau found that in 44 out of 45 broken wing displays, the intruder was led away from the nest. The selective response to the intruder further suggests that the behavior is neither chaotic nor a hard-wired reflexive response. In systematic experiments, Ristau found that plovers learn quickly to discern 'safe' from 'threatening' intruders. "The plover is sensitive to many aspects of its environment, including the attention paid by the intruder to its general nest area (defining attention in terms of direction of the intruder's gaze)."[156] According to Ristau, the results so far suggest that plovers are intentional (in the philosopher's sense).[157]

Against Ristau, Hauser argues that the fact that plovers are sensitive to the direction of the gaze is hardly surprising, since gaze discrimination is common especially among prey species in predator detection.[158] He points out further that Baron-Cohen has argued that though gaze discrimination is important for a developing theory of mind it is not necessary, as evidenced by thoughts and behaviors of blind children.[159] It is not clear to me why Hauser thinks that Ristau's claim that plovers may be intentional is weakened from the fact that gaze discrimination is common among prey species. Gaze

---

[155]Cf. Griffin, Donald. *Animal Minds*. Chicago: University of Chicago Press, 1992, p 210.
[156]Ristau, C.A. ed. Aspects of the Cognitive Ethology of an Injury-Feigning Bird, the Piping Plover.' in *Cognitive Ethology*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1991, p 123.
[157]Ristau, C.A., pp 91-126.
[158]Hauser, Marc D. *The Evolution of Communication*. Cambridge: MIT Press, 1997, p 590.
[159]Ibid, p 590. (refers to Baron-Cohen, S. *Mindblindness*. Cambridge: MIT Press, 1995a.)

discrimination is also common among humans, and Baron-Cohen stresses its importance to developing a SAM in humans (as discussed in section 2.5), which he takes to be a basic component of a ToM. Similarly, Baron-Cohen's argument that gaze discrimination is not necessary for having a ToM, since blind children are able to use touch and hearing to avoid mind blindness, (and so have a ToM) does not alter the fact that gaze discrimination is important in those who are sighted. Baron-Cohen, in fact, presents evidence that if SAM is impaired in a normally sighted person (such as a child with autism), ToM will inevitably be impaired.[160]

Support for Ristau's claim that the plovers may show intentionality is provided by ornithologist Alexander Skutch. Skutch says that when cattle or other hoofed animals approach the nest of shorebirds, instead of behaving injured, the birds sometimes stand up conspicuously, close to the nest with spread wings, or fly directly at the cow, suggesting that they recognize that these intruders may trample and not eat their eggs or young.[161] In his book *Parent Birds and Their Young*, Skutch describes in some detail the great versatility and variety of stratagems parent birds use to protect their young. Concerning injury simulation, Skutch says:

> As to intelligence or judgment, scarcely anything a bird does require more of it than injury simulation...It must time its movements with precision to avoid discouraging the pursuing predator on the one hand, or being caught by it, on the other. In scarcely any other situation in its life does it exercise such agility and alertness...Far from suffering delirium or muscular inhibition, birds are never in fuller command of all their movements than when they act as though crippled or helpless.[162]

Like Griffin and Ristau, Byrne and Whiten similarly suggest that having the ability to deceive is an indication that the animal believes that other animas have minds. Byrne and

---

[160]Baron-Cohen, S. 1995b, pp 41-60.
[161]Skutch, A.F. *Parent Birds and Their Young*. Austin: University of Texas Press, 1976, p 408.
[162]Ibid, p 414.

Whiten are not claiming that all deceptive behavior is intentional. An example of deceptive behavior that is not thought to exhibit intentionality is provided by Griffin. Many species of butterflies and moths, for example, have spots on the dorsal surface of their wings, that, when unfolded, look like eyes. When these creatures are attacked, they unfold their wings suddenly, exposing 'eyes' that scare off their attacker. This behavior is not considered to be intentional since butterflies and moths have no control over the pattern on their wings.[163] On the other hand, Byrne and Whiten note the many ways animals appear to use cunning. They cite many examples of "animals seemingly outsmarting each other in pursuit of food, sex, and power-or simply avoid being beaten up."[164] They have coined the term *tactical deception* to refer to the ability to use an 'honest act' in a different context in order to mislead.[165] Among the examples of tactical deception they provide is that of Paul, a juvenile baboon, whose false danger screams caused his mother, a dominant female, to chase off Mel, a subordinate female, leaving Paul with rhizomes that Mel had dug up. Too small to dig his own, Paul tried this tactic on others, as well. Though a behavioristic explanation can always be given, Byrne and Whiten argue, it becomes stretched in explaining why Paul only tried this tactic when his mother was out of sight but within earshot.[166] Though tactical deception is rare, (because it is difficult to detect-as it is intended to be), withholding information is found across species. Marc Hauser and Doug Nelson suggest that call production in both vervet monkeys and chickens may be intentional. Studies of vervets and chickens "provide evidence of socially mediated call suppression, a subtle form of deception."[167] Each of the theorists here suggest that some animals have the capacity to intentionally deceive their

---

[163]Griffin, p 197.

[164]Andrew Whiten and Richard Byrne cited in Lewin, Roger. 'Do Animals Read Minds, Tell Lies?' in *Science*. 238. 1987: 1350.

[165]Ibid, p 1350.

[166]Byrne, Richard and Whiten, Andrew. 'The Thinking Primates Guide to Deception.' in *New Scientist* 3. 1987: 54.

[167]Hauser, Marc D. and Nelson, Douglas, A. ' "Intentional" Signaling in Animal Communication.' in *Trends in Ecology and Evolution* 6. 1991: 188.

conspecifics. Having the intention to deceive requires, it would seem, the recognition that others have beliefs that differ from one's own - that is, have a theory of mind.

2.8. Simulation Theory and Mirror Neurons

Further support for the view that some animals may be mind readers comes from work in cognitive science. A class of visuomotor neuron has been recently discovered in the premotor cortex of macaque monkeys. These neurons, called *mirror neurons* discharge, both, when the macaque performs an action and observes another perform it. Vittorio Gallese and Alvin Goldman hypothesize that a possible function of mirror neurons (MNs) is to detect certain mental states of observed conspecifics, which is a precursor to mindreading abilities. Activity of MNs fits well with simulation theory, they claim, which "depicts mind reading as matching another's mental states with resonant states of one's own"[168], or simply stated, imagining how another feels based on how I would feel in a similar situation. MN activity is not mere theoretical inference (as in theory theory), Gallese and Goldman point out, but actually creates in the observer the state of the target. They conclude with a speculative suggestion that a cognitive continuity exists between non-human primates and humans in intentional-state attribution, and MNs represent its neural correlate.[169]

2.9. Summary

In summary, I contend that Petrinovich has not shown that a 'chasm' separates animals and humans. According to Petrinovich, there is little overlap between humans and animals, "especially in cognitive abilities relevant to moral agency (most especially in language and in meeting the tests for ToM)"[170] I have for this reason concentrated on an examination of research on language and intentionality

---

[168]Cf. Gallese, Vittorio and Goldman, Alvin. 'Mirror Neurons and the Simulation Theory of MindReading.' in *Trends in Cognitive Science*. 2. 1998: 493.
[169]Cf. Ibid, p 500.
[170]Petrinovich, 1999, p 229.

(relevant to ToM) in animals. Petrinovich's first major claim that our ability for complex communication makes us qualitatively different from other animals is challenged by behavioral studies, particularly of bonobos and dolphins, who, like children, spontaneously acquire language comprehension skills, and by neuroethological studies that provide evidence of a bio-linguistic substrate of language in primates. Petrinovich may argue that these studies show nothing more than that these animals have a simple syntax, not the kind of syntactic complexity necessary for understanding concepts of right or wrong, that permit the phrasing and understanding of moral principles, required for moral agency. Perhaps. But I wonder if understanding concepts of right and wrong *is* a question of complex syntax. A psychopath[171] may have sophisticated syntactic ability yet no moral sense, while a rhesus monkey may have a sense of 'cheating' on social expectations[172] or sacrifice its own good rather than hurt a conspecific.[173] As Marc Hauser reports, research studies with rhesus monkeys suggest that they may intentionally withhold information from competitors. That is, upon finding food, rhesus monkeys sometimes remain silent and quietly eat, rather than call to inform other members of the food source. This behavior is thought to exhibit intentional cheating by the rhesus. The vigorous aggression against the lone silent eater when he is detected by other members is interpreted to mean that he is being punished for cheating on the social expectation to share with the group.[174]

It must be noted that Hauser later gave a more conservative interpretation of the rhesus' behavior. An alternate explanation suggested by a recent study, Hauser argues, is that the rhesus monkeys' failure to call may be a result of

---

[171]Carson, Robert C. et al. eds. *Abnormal Psychology and Modern Life*. 10th ed. New York: Longmans, 1998, pp 335-36.

[172]Allen, C. and Hauser, M.D. 'Communication and Cognition: Is Information the Connection?' in *Philosophy of Science association*. 2. 1993: 81-91.

[173]Wechkin, Stanley, Masserman, Jules H., and Terris, William Jr. 'Shock to Conspecific as an Aversive Stimulus.' in *Psychonomic Science*. 1. 1964: 47-48.

[174]Hauser, M.D. 'Costs of Deception: Cheaters are Punished in Rhesus Monkeys.' in *Proceedings of the National Academy of Sciences*. 89. 1992c: 12137-12139.

their physiology. Hauser describes a study in which the cortisol level in captive female rhesus monkeys was artificially lowered through an administration of metyrapone. The rhesus were then exposed to potentially threatening situations. The results showed that below a particular cortisol level, individuals failed to give an alarm call. Hauser extrapolates these findings to the earlier study of the 'cheating' rhesus monkeys. He argues that at the present time, we are unable to determine whether the rhesus monkeys intentionally withheld information or whether "the silent food discoverers may be under greater stress than their vocal counterparts and the failure to call may simply reflect a subthreshold cortisol level"[175]

Drugs or Deception?

Hauser's hesitation in attributing intention to the 'cheating' rhesus macaques in light of these recent studies is understandable. In an analogous way, there are definite physiological markers involved when a human attempts to deceive another, which law enforcement exploits in criminal investigations. An individual's heart rate and galvanic skin response, for example, are used to decide who is lying and who is telling the truth. Injecting epinephrine[176], however, will produce effects similar to those produced when an individual attempts to conceal deception. Though in both cases the physical manifestations (increased heart rate, flushing, and rapid breathing) have a physiological basis, in one case they are artificially induced and in the other they are caused by the fear of being caught in the intentional attempt to deceive. It makes sense, therefore, to exercise caution in making claims of intentionality when an alternative explanation can be given.

Why the Stress?

---

[175]Hauser, Marc D., 1997, pp 586-87.

[176]Taylor, Shelley E. et al. eds. *Social Psychology*. 9th ed. Upper Saddle River, NJ.: Prentice Hall, 1997, p 65.

In deference to Hauser, I question whether a physiological description of the 'cheating' rhesus monkeys' failure to call provides an alternative explanation to Hauser's original account. In the first place, it is not clear that findings from the recent research with the captive female rhesus monkeys can be extrapolated to the earlier observations of 'cheating' rhesus monkeys. Rhesus alarm calls are produced under very different conditions than calls announcing food discovery. Even given the legitimacy of the extrapolation, Hauser's suggestion that the 'cheaters' may withhold their calls because of increased stress, much like those injected with the cortisol lowering drug, leaves unanswered the question of why the 'cheaters' are under great stress. In the case of the captives, the stress is explained by the directly perceived threat imposed by the researchers. But how is the stress explained in the 'cheaters'? If the stress has not been artificially manipulated, we need to explain its cause. A physiological explanation leaves the question unanswered. A possible intentional explanation is that the 'cheaters' stress is due to the perceived threat of being detected and punished by their conspecifics, much like human deceivers. Alternatively, Hauser's original suggestion that the rhesus monkeys may intentionally withhold information explains the behavior without the need to propose, and so explain, stress as the cause of their call suppression.

Moral Rhesus Monkeys?

In a study carried out by Wechkin et al.[177], a rhesus monkey showed a strong aversion to causing pain to its conspecifics even when doing so was at a great cost to its own well-being. The researchers controlled for dominant-submissive relations, sex differences, and hunger, ruling these out as possible explanations for the rhesus' behavior. Philosopher Bruce Waller remarks of the study that, were the rhesus monkey a member of our species, we would say of it that it acted

[177] Wechkin, pp 47-48.

morally.[178] Philosopher Lawrence Johnson agrees.[179] Johnson opposes the view, held by Petrinovich, that syntactic ability is necessary to moral agency. Because linguistic ability and rationality allow humans to act from principles, Johnson argues, most people seize on these abilities as a morally significant difference between animals and humans. Against this view, Johnson argues that while animals may not be able to understand moral principles, they may be *directly aware* of what makes a given act right or wrong. That is, "(b)eing aware of and caring about the suffering of the other monkey, and acting accordingly, the monkey is acting as a moral agent."[180] The rhesus monkey, Johnson thinks, demonstrates the ability to *directly value* morally relevant factors. (i.e. the negative value of suffering and the positive value of well-being). The role of valuing is critical to moral agency. As Johnson says:

> Unless our moral principles only dangle in an *a priori* vacuum, they, like the principles of physics, must, sooner or later, be grounded in some direct valuing...Without such valuing we cannot distinguish (moral from) morally neutral principles.[181]

Only Humans Have a Theory of Mind?

To support his second major claim, Petrinovich imports Hauser's claim that "organism(s) without a theory of mind...simply don't know how to care, though they behave as if they do"[182] and concludes that non-human primates are not mind readers and therefore "should not be accorded the status of a moral agent."[183] As discussed in this chapter, however, studies in social play strongly suggest that animals of other species may be capable of intentional behavior, an indication of having a theory of mind. Savage-Rumbaugh's work with primates provides further support for the claim that

---

[178]Waller, Bruce N. 'What Rationality Adds to Animal Morality.' in *Biology and Philosophy.* 12. 1997: 341-356.
[179]Johnson, Lawrence E. 'Can Animals be Moral Agents?' in *Ethics and Animals.* IV/2. 1983: 50-61.
[180]Ibid, p 54.
[181]Ibid, p 54.
[182]Petrinovich, 1999, p 172. (refers to Hauser, 1997, p 652.)
[183]Ibid, p 172.

chimpanzees and bonobos may be capable of intentional behavior. Observations of animals by cognitive ethologists also strongly suggest that some animals may intentionally deceive their conspecifics and animals of other species. Cognitive ethologists and philosophers, alike, have argued that having the ability to deceive is an indication that an individual is aware that others have beliefs that differ from one's own. This awareness, (that others have beliefs and that they may differ from one's own), it is argued, is what it means to have a theory of mind. Some animals, then, may be said to have a theory of mind, according to these theorists. Finally, neurobiological studies have detected mirror neurons in macaques, which support the simulation theory of mind reading, providing evidence that some animals may have a theory of mind. In conclusion, I contend that Petrinovich has not shown that humans alone have the two fundamental capacities (language and a theory of mind) that he stipulates as requisite for moral agency.

Chapter 3 The Argument From Marginal Cases

3.1. Introduction

Petrinovich challenges the claim that speciesism is a form of bigotry analogous with racism and speciesism. Philosophers, Singer and Regan, who make the claim, Petrinovich argues, are unable to consistently hold their moral position, and they, themselves, end in 'backdoor speciesism'.[184] Singer, a utilitarian, and Regan, a rights theorist, both appropriate the argument from marginal cases (the AMC) to point out the speciesism in excluding animals from moral consideration, simply because they are animals. Because of the centrality of the AMC to the question of speciesism, an examination of the argument, I think, is in order. As I mentioned in my introduction, Singer's original argument in *Animal Liberation* is the foundation upon which the AMC rests. Its present form has been shaped and developed through philosophical argumentation since its origin in 1975. The AMC, in its most recent formulation, is examined by Daniel Dombrowski in his book *Babies and Beasts*, which he published in 1997. It is to this work that I now turn.

3.2. The AMC

Dombrowski presents a version of the AMC, developed by Lawrence Becker, as the starting point in his analysis of the argument. Though an opponent to the argument, Becker provides a thorough and clear account of the AMC, of which I present the following abbreviated form:

1) Many species of animals are sentient, and, therefore, have an interest in avoiding pain and seeking certain pleasures and satisfactions. 2) Human infants and the profoundly retarded, lacking normal adult cognitive abilities, in some cases permanently, have interests only in the sense that members of other sentient species have them. 3) As these humans and animals are indistinguishable in the morally relevant sense of

---

[184] Petrinovich, 1999, p 196.

having an interest in avoiding pain and experiencing pleasure, it is inconsistent to protect the interest of the humans while denying the same protection to the comparable animals. 4) There is, therefore, no reasoned justification for a difference in our ordinary conduct toward them.[185]

As far as I can see, all this argument is asking is that we be fair. What further reason do we need to refrain from hurting an infant or mentally handicapped person than knowing that it *does* hurt them? If we know that kicking a dog hurts her, why is that not enough to refrain from doing it, just as in the case of the infant? Why must we supply further justification to protect her interests in not being hurt?

3.3. Petrinovich's Speciesism

Petrinovich responds to the challenge posed by the AMC by arguing that "the status of personhood signaling humanity can provide an adequate ground to support the differentiation (between humans and animals)."[186] The emotional contract between humans creates a moral difference between all animals and humans, including the comatose, and the dead and dying, even though the sensibilities of the animal may exceed those of the human.[187] As I argued in chapter 1, Petrinovich's privileging of human persons reflects the age-old assumption that humans are morally separated from animals of other species simply because they are humans. The moral relevance that Petrinovich ascribes to the emotional contract between humans can be challenged on biological and philosophical grounds, as I pointed out. Petrinovich's claim should come as no surprise to any of us, however, as the moral difference that he asserts obtains between animals and humans is reflected in our western moral thought and common practices with animals, and indeed, is enshrined in our law. We are

---

[185]Becker, Lawrence, C. 'The Priority of Human Interests.' in *Ethics and Animals.* ed. Harlan B. Miller and William H. Williams. Clifton: Humana Press, 1983, pp 226-27 n3.
[186]Petrinovich, 1999, p 180.
[187]Ibid, p 180.

bound by law to refrain from doing to a human, living or deceased, that which is often permissible to do to animals.

3.4. Defenders of the AMC

Whereas Petrinovich uses this moral consensus to support his speciesist position, defenders of the AMC challenge our moral intuitions, arguing that speciesism is no more justified than racism or sexism. Singer argues that, just as we would be showing prejudice were we to decide on the basis of an individual's race or sex, whether or not to consider her or his interests, so too, to decide on the basis of an individual's species, is a form of prejudice.

3.5. Petrinovich's Defense

Against Singer, Petrinovich argues that the analogy between racism and sexism, on one hand, and speciesism, on the other, is unconvincing. In support of his claim, he quotes Midgley and Devine[188], who argue in similar ways, that, whereas racial and sexual categories are not biologically real in a profound sense, species differences are highly significant. By way of explanation, Midgley says it would not be necessary to know a person's race in order to accommodate her or him (except in cultural matters), but it is essential to know the species of an animal to know how to treat it. The differences among humans seem insignificant in comparison with differences between a hyaena and a python (Midgley's examples).[189] This difference in 'significance', I think, explains why they find the analogy between sexism, racism, and speciesism unconvincing. Their words suggest to me that they think that the analogy fails because of a kind of category mistake. I understand them to be saying that defenders of the AMC are drawing an analogy between one category (a less significant grouping–i.e. one's race or sex) and another, more profound category (the species one belongs to). Because of the dissimilarity between the kinds of things that can be said at one level of

---

[188]Devine, P.E. 'The Moral Basis for Vegetarianism' in *Philosophy*. 53. 1978: 481-505.
[189]Midgley, M. *Animals and Why They Matter*. Athens: University of Georgia Press, 1983, p 98.

categorizing from that at another, the analogy is weak. As David Hume says:

> But whenever you depart, in the least, from the similarity of the cases, you diminish proportionately the evidence, and may at last bring it to a very weak *analogy* which is confessedly liable to error and uncertainty.[190]

My Response to Midgley and Devine

I think, however, that Midgley and Devine miss the analogy, in this case, not because it is weak, but because they cannot see past the categories they are working with. They refer to 'species' as being 'real, profound, significant, and meaningful groupings', and to 'race and sex' in the negative form of these terms, i.e. '*not* real, *not* significant groupings. There is no reason for holding rigidly to these categories, however, and in fact, good reason not to. It could be said that species are no more biologically real than racial and sexual categories. As Stephen Jay Gould points out, race and sex are in part social and scientific constructions.[191] Irwin Bernstein from Yerkes Regional Primate Centre makes a similar point concerning species. He says:

> "No absolute classification into species is really possible...Nonetheless...many believe that "species" really exist as entities in the real world. Reification of a classification system is certainly comfortable."[192]

"It is easy to forget", Bernstein points out, "that these (classifications) are my creations, not necessarily "natural" categories."[193]

3.6. Categories and What They Tell Us

---

[190]Hume, David. 1779. *Dialogues Concerning Natural Religion.* Part II ed. Henry D. Aiken, New York: Hafner Publishing Company, 1969, p 18.
[191]Gould, Stephen Jay. 'American Polygeny and Craniometry Before Darwin.' in *The "Racial" Economy of Science.* ed. Sandra Harding Bloomington: Indiana University Press, 1993, pp 84-114.
[192]Bernstein, Irwin, S. 'An Idiosyncratic Approach to the Study of Relationships.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. Marc Beckoff and Dale Jamieson eds. Boulder: Westview Press, 1990, p 38.
[193]Ibid, p 35.

Alvin Goldman makes a point similar to that made by Bernstein. According to Goldman:

> The world itself doesn't come pre-categorized, pre-sorted, or pre-sliced. Rather, it is the mind's "noetic" activity or the establishment of linguistic convention that produces categories and categorical systems.[194]

Our categories, as necessary as they are in simplifying and making sense of our world are, nonetheless, as Bernstein and Goldman remind us, our creations, and as such, may or may not be shared with others. Defenders of the AMC, I contend, do not share the classification systems of Midgley and Devine, nor, indeed, I contend, do they have a reason to. They are not drawing a weak analogy between an insignificant grouping (race or sex) and a profound grouping (the species we belong to). They are, rather, drawing similarities between individuals in a single category-the class of individuals discriminated against on the basis of the group they are assigned. Race, sex, and species are no more or no less significant in this category. What is significant is the similarity in the way in which categorization into race, sex, and species is used to discriminate against individuals in these categories. As dissimilar as these individuals may be in other ways, and in different contexts, there are undeniable parallels between a child beaten up in the school yard solely because of his race, a woman excluded from the priesthood solely because of her sex, and a rat given electric shots solely because of his species.

The Analogy Between Racism, Sexism, and Speciesism

What is relevant in the three cases is that each individual is discriminated against solely on the basis of the group that he or she belongs to. Therein lies the similarity from which defenders of the AMC draw the analogy between speciesism, sexism, and racism. Defenders of the AMC are not arguing that everything that is true of the woman is also true of the child or the rat. That would be like arguing that in the category

---

[194]Goldman, Alvin. *Epistemology and Cognition.* Cambridge: Harvard University Press, 1986, p 152.

'red things', everything that is true of a wagon is also true of a rose and an apple. The differences between these objects, however, does not disallow them from being in the same category 'red things'. In a similar way, the objection against the comparison made between a woman, child, and a rat is based on a misunderstanding of the analogy. Just as we recognize the obvious differences between a wagon, rose, and apple, defenders of the AMC are well aware that there are significant differences between the child, rat, and woman. The point of comparison between the child, rat, and woman is, as I said, the discrimination each experiences because of her or his group membership. If we agree that pain is morally relevant and that the woman, child, and rat are capable of experiencing pain, condoning the rat's pain, just because he's a rat, is no less a form of discrimination than excluding the woman from the priesthood, just because she's a woman.

Furthermore, even if it were granted that species is a more significant grouping than race and sex, as Midgley and Devine contend, a strong analogy can still be drawn between speciesism, racism, and sexism, just as it is drawn between discrimination on the basis of age, height, weight, and sex, even though on some accounts, an individual's sex is the more significant grouping. A woman who is excluded from a management position solely because she is a woman is no less or more discriminated against than one who is excluded solely because she is fat, short, or old, even though the category of persons who are women may be broader and more significant than groupings based on age, weight, or height. Similarly, even though the species one belongs to may be a broader and more significant way to categorize than is race or sex, the comparison between discrimination on the basis of race, sex, and species membership is not thereby weakened. What is important to the analogy is that an individual can experience discrimination whether the group he or she belongs to is more or less significant than any other, in Midgley and Devine's sense. The claim made by Midgley and Devine, then, that we would have less trouble accommodating the child and woman

(without knowing their race or sex) than the rat (without knowing his species) is irrelevant to the analogy made by defenders of the AMC, no matter how important it may be in another context (i.e. deciding on the appropriate treatment for an individual).

No Overlap Between Animals and Humans?

The disanalogy between racism, sexism, and speciesism, Petrinovich argues, is most apparent when we consider that there is little overlap between animals and humans in critical aspects of emotional bonding and cognitive capabilities, most especially in language and meeting tests for ToM. There is, on the other hand, a high degree of overlap between different groups of people in each of these areas, Petrinovich argues.[195] As I argued in chapter 1, while emotional bonding between the neonate and its community is critical to its survival and reproductive success, as Petrinovich claims, he has not shown why that in itself justifies speciesism. As I pointed out, if we are not driven by biology but have the capacity for moral deliberation, speciesism is not a necessary aspect of our social condition, as he claims. In chapter 2, I presented evidence from studies in animal behavior, cognition, and neurobiology, showing that there is, indeed, overlap between animals and humans in the critical areas of language and the possession of ToM.

3.7. Petrinovich's Argument Against Regan and Singer

The next argument that Petrinovich poses is directed specifically against Regan and Singer. Petrinovich agrees with Singer and Regan that in ordinary circumstances, animals, whom he classes as 'moral patient' are due respect and care for their basic needs. He does not share their view, however, that equal consideration should be given to the like interest that an animal and a human infant have in avoiding pain. To the charge that it would be inconsistent to accord moral standing to the infant but not the animal, where both have

---

[195] Petrinovich, 1999, pp 228-29.

similar capacities, Petrinovich argues that the infant is a member of the human community, and, as such, is accorded the status of personhood, distinguishing it from animals. He counters that it is not he, but Singer and Regan who hold inconsistent positions.[196] Because I have discussed Petrinovich's theory of personhood at some length in chapter 1, I simply re-state here that Petrinovich's notion of 'person' is puzzling. Though he acknowledges animals to be persons within their own species, only humans are persons in a morally significant sense. He ends up begging the question by equating 'person' with 'human'. He has not show why those who are recognized members of the human species are accorded a higher moral status than members of other species.

Petrinovich argues quite forcibly against Regan's rights position, and to a lesser degree, against Singer's utilitarian position. He argues that Regan, in attempting to show that all individuals with moral standing are equal in inherent value, regardless of their race, sex, or species, cannot adhere to his position. He charges Regan with applying special considerations in an ad hoc manner in difficult moral situations and chides him for allowing exceptions to his notion of equal inherent value. He puzzles, for example, over the different treatment of individuals who have equal interests in Regan's moral theory.[197]

Regan's Inherent/Intrinsic Value Distinction

As I briefly outlined in my introduction, Regan argues that all individuals who are 'subjects of a life' (that is, individuals who have beliefs, desires, a sense of the future, and so on) have inherent value. An important distinction that Regan makes is that between *intrinsic value* and *inherent value.* Intrinsic value has to do with the experiences an individual has (i.e. an individual's pleasures and preferences). The experiences of an individual whose life is happy, pleasant, and filled with refined preferences would be considered to have

---

[196]Petrinovich, 1999, pp 179-80.
[197]Ibid, pp 183-88.

greater intrinsic value than the experiences of an individual whose life is sad, painful, and filled with base preferences. Inherent value, on the other hand, has to do with the value an individual has in her or himself, independently of the experiences and preferences that the individual may have.* Whereas intrinsic value admits of degrees, "(i)nherent value is...a *categorical* concept. One either has it, or one does not."[198] That is, whereas individuals have varying degrees of intrinsic value, all individuals who have inherent value possess it equally, regardless of the quality of their experiences. Equal respect is due to all individuals with inherent value, therefore, regardless of their race, sex, species, or life experiences.[199]

While Regan focuses his attention on individuals who are subjects of a life, it must be noted that he considers the possibility that there may be individuals, and collections of individuals, who, though they do not meet the subject of a life criterion, nonetheless have inherent value. He is open to the suggestion made by environmental philosophers that ecosystems may have inherent value. That is, the environment itself may have value independently of its value to those who use it. He leaves it to environmental ethicists to work out the details of an ethical theory grounded on the inherent value of the environment.

Different Yet Equal

Regan's notion of inherent value commits him to the position of defending the equal moral status of individuals with inherent value. Though the interests of individuals with inherent value must be counted equally, Regan argues, it is nonetheless possible that individuals may be treated differently. "The postulate of inherent value", Regan argues,

---

* It should be noted that Regan's notion of *inherent value* is used in a way similar to Kant's *intrinsic worth*. That which is an end in itself (has value in itself) has intrinsic worth, according to Kant. See Kant, Immanuel. 1785. *Foundations of the Metaphysics of Morals*. 2nd ed. trans. Lewis Whitebeck. New York: Macmillan Publishing Company, 1990, p 52.

[198] Regan, 1983, pp 240-41

[199] Ibid, pp 235-36.

"is not itself a moral principle...(that) enjoin(s) us to treat...individuals (with inherent value) in one way or another, (but rather, to simply) give each (one) his or her due.[200] Regan is making a distinction loosely similar to that made by Alvin Goldman between regulative and non-regulative norms . "Regulative principles directly guide action, while non-regulative principles indirectly guide , without providing instructions."[201] The principle of equality, like Goldman's non-regulative principle, enjoins us to count the interests of all individuals equally, but it does not stipulate how that is to be accomplished. According to Regan, though each individual has equal inherent value, the way he or she is treated depends on the peculiarities of the individual. To respect an individual's inherent value just means to provide what is appropriate to her or him. As James Rachels puts it, where there are relevant differences between individuals, different treatment may be justified. Animals cannot read, write, or do mathematics, he argues, so it makes no sense to admit them to universities.[202] Regan says, for example, that he may have equal regard for the interest that his son and his neighbor's son have in receiving a medical education yet help only his son. Though the interests of both are considered equally, he argues, he has duties to his son that he does not have to the children of others.[203]

Petrinovich cites Regan's example of differential treatment between his son and the son of his neighbor to support his claim that Regan is unable to hold consistently to his moral position. He questions Regan's claim that different treatment can be given to individuals with equal interest without violating the principle of equality. He suggests the Regan may be sidestepping the powerful influence of kinship bonds. He says that "(w)henever kinship bonds are involved, an equal

---

[200]Regan, 1983, p 248.
[201]Goldman, pp 25-26.
[202]Rachels, James. *Created from Animals The Moral Implications of Darwinism.* Oxford: Oxford University Press, 1990, p 178.
[203]Cf. Regan, Tom. 'Animal Rights, Human Wrongs' in *Environmental Philosophy.* eds. Michael E. Zimmerman et al. Englewood Cliffs, NJ.: Prentice-Hall, 1993, p 38.

interest no longer is equal."[204] The importance of evolved factors, Petrinovich thinks, should be acknowledged and incorporated within our moral systems.

It is my contention that Petrinovich's charge of moral inconsistency against Regan cannot be sustained. Petrinovich doubts Regan's claim that it is possible to give equal consideration to the interest of his son and his neighbor's son and yet help only his son. I agree with Petrinovich that on the face of it, it appears that Regan is making an unwarranted exception. Interests are either equal or they are not. On closer reading, however, I do not think that Regan has compromised his moral position. In the first place, when deciding the appropriate action to take in moral cases, I doubt it is ever possible to apply exactly the same treatment to each individual situation. Many interacting factors play a role in determining the appropriate treatment in any given case. While we may have equal respect for the interests of all women to have an abortion, for example, the length of the pregnancy, the health of the woman and fetus, as well as social, cultural, and economic factors must all be considered in determining the appropriate treatment. In the case of the interest that Regan's son and his neighbor's son have in a medical education, both Petrinovich and Regan agree that Regan's obligation to his son is morally relevant. For Petrinovich, parental obligation is morally relevant because it is based on our biologically evolved kinship bonds. This evolved factor, Petrinovich thinks, makes a moral difference, such that equal interests are no longer equal.

I am not sure that Regan would disagree with Petrinovich that parental obligation is biologically based. The disagreement between them centers rather on the question of whether Regan can legitimately claim that he is counting interests equally while applying different treatment to his son and the son of his neighbor. If I understand Regan correctly, he is arguing

---

[204]Petrinovich, 1999, p 184.

that he may regard both interests as being equal yet only take personal responsibility for his son's education. A moral agent, it seems to me, may very well consider the interests all individuals have in being clothed, fed, and educated to be equal, yet recognize that he or she cannot personally respond to all of them. The same of course holds for our personal responsibilities as spouse, lover, and employee. I do not think that allowing special considerations necessarily shows a weakness in Regan's position. Moral deliberation often does have to take into account special considerations that have not been anticipated nor need to be addressed in ordinary situations.

3.8. Fantasy Dilemmas and Backdoor Speciesism

Petrinovich stresses the value of fantasy dilemmas in philosophical argumentation to explore the implications of our moral theories. He points out that while Regan argues that animals and humans have equal inherent value, nonetheless, "animals would lose out against almost any normal human, as does happen when Regan considers the lifeboat dilemma involving a decision of whether to drown one of four human occupants or one dog."[205]

The lifeboat dilemma that Petrinovich is referring to is an imaginary situation that Regan has created to show how it may be possible to resolve a moral conflict between the interests of individuals with equal inherent value. On the imaginary lifeboat are 4 normal adult humans and a dog. Because the lifeboat can only support 4 of the individuals, all will drown unless one is pushed overboard. Because all have equal inherent value, the question is, who should be sacrificed? Regan resolves this moral dilemma by arguing that though equal respect is due to the interests of each individual, the dog should be pushed overboard because her death forecloses less opportunities for satisfactions than would the death of a normal adult human.[206]

---

[205]Petrinovich, 1999, p 182.
[206]Regan, 1983, p 324, 35.

The Harm Principle

Because harm detracts from the experiential quality of an individual's life. Regan argues, we have a duty not to harm any individuals. This is 'the harm principle'. Though no individual should be harmed, distinctions can be made between the magnitude or severity of harms. The harm of death, for example, would be significantly different than the harm of a broken arm. The harm of death, itself, however, admits of degrees of severity. The death of a young, healthy child may occasion more harm than that of a terminally-ill elderly patient. According to Regan, "the magnitude of the harm that death is, is a function of the number and variety of opportunities for satisfaction it forecloses".[207m] Though he does not discuss in detail what he means by 'number and variety of opportunities for satisfactions', it may be assumed from his earlier discussion on intrinsic value that he is referring to the pleasures and preference satisfactions that an individual experiences. In that discussion, Regan makes it clear that, unlike the attribution of inherent value, it is possible to attach various degrees of value to individual life experience. As stated earlier, the experiences of individuals with cultured preferences and pleasant lives may be considered to have more intrinsic value than those of individuals with base preferences and unhappy lives. On this interpretation, Regan may be understood to be arguing that though the 4 humans and the dog have equal inherent value, because a choice must be made, the intrinsic value of their experiences must be considered and weighed. Because the dog's experiences have less intrinsic value than those of the humans, less harm attaches to the death of the dog than it would the death of a human.

Evelyn Pluhar provides a somewhat similar interpretation of Regan's 'harm of death' condition. As Pluhar points out, it is doubtful that Regan means by 'number and variety', 'lots of opportunities for different kinds of satisfaction'. On that

---

[207]Regan, 1983, p 314.

interpretation, she remarks, a seventy year old man may have fewer satisfactions than a puppy. Regan, Pluhar suggests, must rather intend 'variety' to entail 'richness' and 'complexity' of experience. On this interpretation, she says, "chasing and catching Frisbees would count for much less than reading an Emily Dickinson poem"[208] Pluhar and I agree that Regan resolves the lifeboat dilemma by drawing a comparison between the quality of life experienced by the dog and that experienced by the humans. Regan assumes, and takes it as obvious, that we would all agree, that the dog's experiences have less value than those of normal adult humans. Less harm, he thinks, is therefore, occasioned by the dog's death than would be by the death of a human. He says: "(N)o reasonable person would deny that the death of any of the four humans would be a greater prima facie loss, and thus a greater prima facie harm, than would be true in the case of the dog."[209] Though Regan does not involve himself in inconsistency (by making the intrinsic/inherent value distinction), I think, nonetheless, that Petrinovich remarks correctly that this is 'backdoor speciesism'.

Support for Regan's [illegible]

Proponents of the [illegible]s than those who oppose it, generally agree wi[illegible] that the lives of animals have less value than the lives of humans. Singer, like Regan, argues that it is not "as wrong to kill a dog as it is to kill a normal human being."[210] It is only when we draw the boundary of our moral concern along the species boundary, Singer argues, that we are guilty of speciesism. Dombrowski, too, says that "(t)here is nothing speciesist in seeing normal human life as having a higher quality and greater richness than animal life."[211] Rachels share the same view, adding that because of our linguistic capacities, our lives have a complexity that gives us a moral edge in conflicts with

---

[208]Pluhar, Evelyn. *Beyond Prejudice*. London: Duke University Press, 1990, p 289.
[209]Regan, 1983, p 324.
[210]Singer, 1975, p 21.
[211]Dombrowski, p 85.

animals.[212] For this reason, he argues, it would be worse to kill a human than an animal. Rosemary Rodd similarly argues that "(s)pecies loyalty does count for something, and therefore we should (in extreme circumstances) prefer to sacrifice an animal rather than a human."[213] She cautions, however, that "we still have a duty to discover whether the choice really is as stark as this, or whether there is a way to avoid sacrificing either human or animal."[214] The idea expressed by these philosophers, then, is that in normal circumstances, equal moral consideration should be extended to sentient beings of comparable mental awareness, regardless of the species the individual belongs to. In conflict cases, however, normal human interests take precedence because the quality of normal human life is higher than that of animals. Indeed, as Dombrowski argues:

> (A)ll defenders of the AMC treated in (*Babies and Beasts)* agree that in extremis we should favor the interests of normal human beings over the attenuated interests of animals. In normal circumstances, however, there is no need to sacrifice animals for our sake.[215]

Defenders of the AMC have gone a long way in showing the inconsistency in showing preference for humans where animals have like interests. They have, in another sense, however, not moved beyond Mill's 19th century claim that "It is better to be a human being dissatisfied than a pig satisfied."[216] The claim that normal human life has a greater quality than animal life is itself a speciesist claim.

Isn't This Speciesism?

Petrinovich sees the pervasiveness of speciesism, even among those who attempt to oppose it, as support for his claim that speciesism is a justified moral position. I think it simply shows that further argumentation is necessary to recognize and oppose speciesism, just as it sometimes requires lifetimes

---

[212]Rachels, p 189.
[213]Rodd, p 179.
[214]Ibid, p 179.
[215]Dombrowski, p 102.
[216]Mill, John Stuart. 1861. *Utilitarianism* ed. Oscar Piest New Jersey: Prentice Hall Inc., 1957, p 14.

or generations to identify and correct the biases of racism and sexism. Defenders of the AMC do not recognize the speciesism in their positions. Rachels argues that the principle of equality requires that if no relevant differences obtain between individuals, they must be treated similarly. "This is just an application of the old Aristotelian point that like cases should be treated alike, and different cases, differently."[217] Each of the defenders of the AMC that are discussed in *Babies and Beasts*, including Dombrowski, himself, accept the principle of equality and apply it to animals who are comparable to humans in morally relevant ways. But like Rachels, they do not think that any animals have as rich or complex lives as those of normal adult humans. The complexity of normal adult human life, both linguistically and psychologically, marks a significant difference between humans and animals, according to these philosophers. There is, they think, therefore, a morally relevant difference between animals and normal humans. For that reason, human life takes precedence over that of animals in cases where there is a serious conflict between them.

The idea that a rich and complex life has moral relevance, as articulated by Rachels, has a different meaning than that expressed by Petrinovich. Rachels is not claiming, as did Petrinovich, that the complexity of our lives marks a *qualitative* moral difference between us and animals of other species, that justifies the differential treatment of animals and humans. As Rachels says, "a rich and complex life may be irrelevant to some forms of treatment. As he argues:

> Though having a syntactically complicated language, vastly superior to any communication system of non-humans is relevant to who is accepted into a university, it is not in the case of torture.

Rachels astutely remarks:

> Of course rabbits can't read, write, or do math, or go to the opera as humans can, yet are these differences

---

[217] Rachels, p 176.

relevant to justify Draize testing on rabbits and not on humans? It's not done to humans because a) humans can suffer pain, and b) humans need their eyesight to conduct their lives. Are rabbits similar to humans in the relevant respect?[218]

Petrinovich and Defenders of the AMC

Although a complex life may be irrelevant to some forms of treatment, when forced to choose who must die, Rachels continues, an individual with a simple life ought to be chosen over one with a complex life. Like Regan, he thinks that less harm is caused by the destruction of a simple life than by a complex one. He asks us to consider the intuitive appeal of this position since it would explain, for example, why it would be worse to kill a rhesus monkey than swatting a fly. There is, then, common ground between Petrinovich and defenders of the AMC, as each of these ethicists agree that in conflict situations, the life of a normal human ought to be given greater moral consideration than that of an animal. Where defenders of the AMC differ from Petrinovich is in their claim that in ordinary circumstances, where animals and humans have like interests, equal moral consideration must be given to both. Against Petrinovich, they argue that animals and humans with comparable sensory and cognitive capacities are due equal moral consideration. The capacity to experience pain does not stop at the species boundary. Because pain is morally relevant in our treatment of infants and the mentally disabled, justice demands that animal pain be given equal moral concern. It is no less morally objectionable to experiment on a sensitive dog or rabbit than it would be to experiment on a human infant of comparable sensory capacity. Indeed, in the case of Draize testing, "which involves dripping chemicals into rabbit's eyes to establish the extent of irritation and damage caused by the (chemicals)"[219],"rabbits cannot cry or flush the material from the eye, so their capacity for irritation is far

---

[218]Rachels, p 180.

[219]Montgomery, Charlotte. *Blood Relations.* Toronto: Between the Lines, 2000, p 121.

greater than man's."[220] A moral system in which the problem of pain is of central moral significance yet which ignores or condones the pain of these individuals simply because of their species, I think, is seriously inadequate.

But Isn't This Speciesism?

I think that defenders of the AMC have made a strong and well argued case for giving the interests of animals and humans equal consideration where there are morally relevant similarities between them. I, nonetheless, find speciesism in the claim that in cases of extreme conflict between animals and humans, the life of the animal ought to be sacrificed. The justification for the claim, (as stated earlier), is that, because of the richness and complexity of normal human life, its destruction would be a greater loss than that of the relatively simple life of an animal. The question is, a greater loss to whom? Great care, I think, ought to be taken in deciding the value of a life. As Evelyn Pluhar points out, we would not consider an individual, whose life was filled with such a satisfactions as traveling, reading Classics, playing chess, and listening to Gorecki's Third Symphony to have greater moral value in a moral conflict than an individual, whose life was filled with such satisfactions as tacos, beer, and listening to "Drop Kick Me Jesus Over the Goal Posts of Life."[221](A real song, incidentally, Pluhar points out) What if those satisfactions included chasing squirrels, chewing bones, and playfighting with one's companions? No one but the most hardened skeptic would doubt that a dog let loose to run wild and explore every sight, sound, and smell meets Regan's criterion for a happy life. Just because we lack the abandon, curiosity, and acuity of sense to experience the many and varied satisfactions of animals, are their satisfactions thereby of less value than those of our relatively dimmed sensory capacities? Or is it simple human arrogance to assume that what we find satisfying has more value?

---

[220]Singer, 1975, pp 142-43. illustration UPI Photo.
[221]Cf. Pluhar, p 291.

While I value and find deep satisfaction in engaging the thought of Hume, Rollin, and Best[222], surfing the net, and viewing Hellenistic sculpture and Cubist paintings, my satisfaction in plunging into cool, deep, rushing water is incomparable. Were swimming my only satisfaction, my life would still be of inestimable value to me. Its loss would matter very much. The idea that the value of life is a matter of subjective valuing is brought out brilliantly by Rachels. As Rachels points out in discussing the post-Darwinian theory of value of human life, "the value life has for the individual who is the subject of that life is what is important, and not how it is valued by God or the universe."[223] I think this can be applied equally to all animals who are subjects of a life, with no loss in its meaning.

3.9. Beware of Fantasy Dilemmas

Because moral deliberation at times involves deciding between conflicting interests, fantasy dilemmas may, as Petrinovich claims, test the adequacy of a moral system. Not all defenders of the AMC share Petrinovich's enthusiasm for them, however. Though it may be true, as Petrinovich claims, that fantasy dilemmas are necessary to test our moral principles, our actions in extreme situations do not necessarily, and indeed, in some cases, should not reflect our normal practices. As Gary Francione points out, if we choose to save the life of a child over an elderly person in a fire, "would that mean that it is morally acceptable to enslave old people?"[224] Dombrowski makes a similar point, arguing that even though he would save the life of his child over that of his neighbor's in a conflict between them, his affection for his child "does not license tyranny such that I may kill my neighbor so as to benefit my child."[225] Regan, too, warns against generalizing from exceptional cases to ordinary situations. While it may

---

[222]Best, Stephen. 'God, Culture, and Women' in *Skinned*. ed. Anne Doncaster North Falmouth: International Wildlife Coalition, 1988, pp 167-89.
[223]Rachels, p 198.
[224]Francione, Gary. *Introduction to Animal Rights*. Philadelphia: Temple University Press, 2000, preface xxx.
[225]Dombrowski, p 112.

be morally appropriate, for example for starving humans to eat an animal in order to survive, this does not imply that raising and slaughtering animals for consumption in normal circumstances is justified. As he says, that would be like arguing that because I may kill someone in self defense, this implies that I am justified in killing anyone I please.[226]

I think that Francione's cautionary note should be taken seriously. As I discussed earlier, Regan examines a possible situation in which we are forced to choose between a dog and 4 humans, each of whom have inherent value. A resolution to the conflict of interests is brought about by an appeal to 'the principle of equality' and 'the principle of harm'. Both principles have been developed and discussed in meticulous detail by Regan.[227] While I do not find Regan's resolution to the moral dilemma to be satisfactory (for reasons I have already discussed), he has made explicit his reasoning in reaching his resolution. As Regan and the other defenders of the AMC point out, unusual circumstances often call for unique measures. Moral principles that apply in these circumstances cannot always be applied in normal situations. Appealing to principles designed to address specific circumstances does not necessarily reveal an inconsistency in a moral theory. The decision to separate conjoined twins, with the attendant risk to the life of the weaker twin, for example, requires careful deliberation not required under normal circumstances. We would not agree to endangering the life of one twin for the sake of the other in normal circumstances. The decision, made under extreme circumstances, is, nonetheless, consistent with holding that the twins are due equal respect. Far from revealing the inadequacy of a position, allowing for special considerations may in fact demonstrate the necessary flexibility and responsiveness in a comprehensive moral theory.

---

[226]Regan, 1983, p 352.
[227]Ibid, note particularly pp 187-94, chapter 7.

While he harshly criticizes Regan's position, Petrinovich, himself, may run into problems in addressing moral dilemmas similar to those he criticizes Regan for. Central to Regan's moral theory is his anticipation of and response to possible moral dilemmas (such as those discussed above). Whereas Regan has done the hard work of considering several possible moral conflicts involving animals and humans, for Petrinovich there is no conflict. In Petrinovich's moral theory, humans alone have equal moral status. Moral conflicts between them, however, are not addressed. Petrinovich says, for example, that from an evolutionary perspective, a young reproductively able person would be assigned more inherent value than a post reproductive person, other things being equal.[228] He also says that favoring family members and kin is both advantageous evolutionarily and has moral relevance. Agreeing with Leahy, he suggests a diminishing order of obligation, beginning with immediate family, kin, neighbors, strangers, to animals and inanimate objects.[229] This ordering, he thinks, makes sense evolutionarily. How then would he resolve a moral conflict between his elderly grandmother and a neighbor's teenage daughter? His grandmother, being his kin, is entitled to greater moral consideration than his neighbor's daughter. From another evolutionary perspective, however, more value would be assigned to the neighbor's daughter. Similarly, he has not shown how he would act were he faced with a choice between his biological and adopted sons. The interests of his biological son take priority over all other individuals, yet his adopted son has equal claim to moral consideration because of their special relationship.[230] How would Petrinovich respond to a moral dilemma involving any of these individuals? He doesn't say. It seems that Petrinovich's recommendation of fantasy dilemmas to explore the implications of moral theories does not include subjecting his own theory to them. While fantasy dilemmas may have some value in testing the adequacy of a moral position, as Petrinovich claims, he may himself, become

---

[228]Petrinovich, 1999, p 191.
[229]Ibid, p 27 (refers to Leahy, M.P.T. *Against Liberation.* London: Routledge, 1991).
[230]Ibid, p 352.

trapped by them Every human is someone's child, whose child takes precedence in a moral conflict? I think that we would do well to recognize the limitations of fantasy dilemmas, as Francione cautions.

3.10. Speciesism Not Justified

Speciesism, whether opposed but implicit in the work of defenders of the AMC, or acknowledged and advocated by Petrinovich, I contend, has not been rationally justified. Petrinovich's speciesism is based on his claim that humans possess a unique bundle of characteristics that set them apart both biologically and morally from all other animals. Humans alone, he claims, have a complex language, minds capable of appreciating other minds, and the ability from birth to respond to and elicit emotional responses from human caregivers. As I have shown in the previous two chapters, however, the claim that a boundary separates humans from other animals, in the ways Petrinovich describes, is contested. Studies in cognitive ethology, animal cognition, behavior, and neurobiology challenge Petrinovich's claim to human uniqueness, in terms of language and intentionality, that is relevant to having a theory of mind. While emotional bonds between neonate and caregiver enhance the likelihood of survival and reproductive success, as Petrinovich claims, he has not shown how speciesism is thereby justified. A caregiver's emotional bonds with her child does not entail favoritism for all members of her species. In fact, as Roger Trigg points out, "benevolence directed beyond the immediate family could become positively harmful from the point of view of biological fitness."[231] Trigg's point, of course, is that competition from other members of our species decreases the chances of passing on one's own genes. Further, Petrinovich's claim that the emotional bond between a neonate and its caregivers forms the basis of speciesism is not adequately defended. It is this emotional bond, he thinks, that separates us morally from animals of other species. Petrinovich simply assumes that

---

[231] Richards, Robert J. 'Justification Through Biological Faith', 1986: p 349.

emotional bonding between the neonate and its caregivers is universal and begins at the moment of birth. A point not adequately discussed by Petrinovich, however, is that not all human neonates are capable of responding to or eliciting emotional responses from caregivers. He must explain why exceptions are made for these individuals. If emotional bonding is not, after all, necessary to be included among those whose interests are protected, on what basis are animals excluded from equal moral consideration? Petrinovich is left with the bare assertion that animals are excluded because they are animals and not humans. What is that, if not bare and undefended speciesism? Petrinovich's claim that the welfare interests of humans and animals cannot be considered comparable, I conclude has not been justified, merely asserted.

Petrinovich's charge of speciesism against philosophers who do draw comparisons between the interests of animals and humans, I must concede, is justified. Defenders of the AMC have presented strong and compelling arguments showing the inconsistency and speciesism in excluding animals from moral consideration where there are morally relevant similarities between them and humans. As Rachels points out, the approach commonly used to exclude animals from moral consideration is to assume that there is some big difference between animals and humans that puts us in different moral categories. Being in different moral categories justifies differential treatment of animals and humans. But why, he asks, should characteristics that are relevant to one form of treatment be relevant to all others? Arguing for moral individualism, he says, "Surely, the sensible approach is to take up the different forms of treatment and the characteristics that make us eligible for them, one by one."[232] While denying an animal admission to a university because she can't read makes sense, subjecting her to painful experiments and intense confinement on this same basis does not. While reading is relevant to university admission, what does it have to do with

---

[232]Rachels, p 179.

the capacity to experience pain? Humans are not subjected to painful experiments because they have the capacity for pain and not on the basis of their ability or inability to read. Why should animals be treated any differently? Where pain is a morally relevant feature of our moral theories, consistency and justice demand that all individuals, whether human or animal, with the capacity for pain be given equal moral protection from unnecessary pain.

While Rachels and other defenders of the AMC have pointed out the inconsistency and speciesism in moral theories that unjustly discriminate against animals, these philosophers, themselves, I contend, do not avoid speciesism. Their claim that the loss of a normal human life is greater than that of an animal, because of its greater richness and complexity, is a speciesist claim. Implicit in this claim is the assumption that we know animals' lives to be neither rich nor complex and the assumption that a rich and complex life has more value than a simple one. As Rachels readily acknowledges, however, the value of a human life is a matter of subjective valuing. An individual with a simple life may, in fact, value it more than another does her more complex and rich life. Relatedly, a child's death is usually experienced as a far greater loss to its mother than that of any other, no matter how rich and complex that life may be. The sense of loss is personal. But could the same not be true of animals? Perhaps animals do not value their lives in exactly the same way as humans, but their intense struggle against its loss suggests that their lives have value to them. Similarly, just as a human mother grieves the loss of her child, animal mothers of many species cry out, nudge, search for, and carry their dead infants close to their bodies, giving the impression that this loss matters very much to them. Whose loss is greater? To assume that the loss of normal human life is greater than the loss of animal life is just to privilege the human perspective. Further, if the value of a life is determined subjectively, and not by meeting an objective standard, such as richness and complexity, in the case of humans, why does richness and

complexity determine whose life has more value where the lives of animals and humans are in conflict? Why are animals held to a different standard when determining the value of their lives? Is this not speciesism? Finally, can we really be certain that only humans have rich and complex lives when we are only capable of taking the human perspective?

Against Petrinovich, I do not think that the pervasiveness of speciesism indicates that it cannot or should not be otherwise. I suggest, instead, that philosophers continue to develop the AMC, with an eye to findings in studies in cognitive ethology, animal cognition, behavior, and neuroethology. Though perhaps Mill can be excused for holding a pig's satisfactions in such low esteem, there is no reason for defenders of the AMC to argue from a 19th century understanding of them. To be fair to Mill, if the only pigs he observed were confined to their sty, all their choices made by a farmer, it would seem that their satisfactions pale in comparison to humans. More recent animal studies, however, have shown that "pigs are capable of learning to quite a sophisticated level."[233] Studies reveal that domestic pigs that have been freed to live in natural environments resemble European wild boars that develop complex social bonds.[234] Indeed, the 'civility' of some pig strains has led to their genetic manipulation as medical parts supplies and research subjects.[235]

We are only now in the early stages of scientific animal studies, freed of the *a priori* assumption of non-consciousness and behaviorist methodology. Where Frey saw only 3 behaviors in his dog, for example, cognitive ethologists easily recognize 50 or more different actions in a single study of canid behavior.[236] As important as apprising ourselves of animal

---

[233] *Alternatives to Intensive Systems.* Symposium at Wye College, Hertfordshire: The Universities Federation for Animal Welfare, July 13-15, 1981.
[234] Rollin, Bernard E. *Farm Animal Welfare.* Ames: Iowa State University Press, 1995, p 75. (refers to Wood-Gush, D.G. M. *Elements of Ethology.* London: Chapman and Hall, 1983, p 38.)
[235] Van de Pitte, Margaret. Personal communication, August 1, 2002.
[236] Allen and Beckoff, p 40.

studies is, we must also examine our own assumptions about the natures of animals. Singer argues that confining cows in a Devon pasture would not be as restrictive to their rights as it would be to those of humans, because humans have an interest in seeing the world.[237] Singer's cows may not be as satisfied in Devon as claims. Why else must they be fenced in? Perhaps all of us, like Singer, notice the fences but question neither their significance, nor the reasons why we have put them up in the first place? Could it be that Singer's cows, Mill's pig, Regan's dog, and my cats have fewer satisfactions than humans, in part, because we have deprived them the opportunities for satisfaction?

[237]Singer, P. ed. *In Defence of Animals*. Oxford: Basil Blackwell, 1985, p 7.

Works Cited

Allen, Colin and Beckoff, Marc. *Species of Mind.* Cambridge: MIT Press, 1997.

Allen, C. and Hauser, M. D. 'Communication and Cognition: Is Information the Connection?' in *Yearbook of the Philosophy of Science.* 2. 1993: 81-91.

'Alternatives to Intensive Husbandry Systems.' *Symposium at Wye College.* Hertfordshire: The Universities Federation for Animal Welfare, July 13-15, 1981.

Baron-Cohen, S. *Mindblindness.* Cambridge: MIT Press, 1995a.

---.'The Eye Detection (EDD) and the Shared Attention (SAM): Two Cases for Evolutionary Psychology.' in *Joint Attention.* eds. C. Moore and P. J. Dunham. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1995b.

Baron-Cohen, S. and Sweetenham, J. 'The Relationship Between SAM and TOMM: Two Hypotheses.' in *Theories of Theory of Mind.* eds. P. Carruthers and P. K. Smith. Cambridge: Cambridge University Press, 1996.

Becker, Lawrence C. 'The Priority of Human Interests.' in *Ethics and Animals.* eds. Harlan B. Miller and William H. Williams, Clifton: Humana Press, 1983.

Berk, Laura E. ed. *Child Development.* 4rth ed. Toronto: Allyn and Bacon, 1997.

Bernstein, Erwin S. 'An Idiosyncratic Approach to the Study of Relationships.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson. Boulder: Westview Press, 1990.

Best, Stephen. 'God, Culture, and Women.' in *Skinned.* ed. Anne Doncaster. North Falmouth: International Wildlife Coalition, 1988.

Bickerton, Derek. *Language and Species.* Chicago: University of Chicago Press, 1990.

Bieser, A. and Muller-Preuss, P. 'Auditory Responsive Cortex in the Squirrel Monkey: Neural Responses to Amplitude-Modulated Sounds.' in *Experimental Brain Research.* 108. 1996: 273-284.

Byrne, Richard and Whiten, Andrew. 'The Thinking Primate's Guide to Deception.' in *New Scientist.* 3. 1987: 54-57.

Carson, Robert C., Butcher, James N., and Mineka, Susan. eds. *Abnormal Psychology and Modern Life.* 10th ed. New York: Longmans, 1998.

Darwin, Charles. *The Descent of Man and Selection in Relation to Sex.* 1871, repr. New York: Modern Library.

Dene, Howard T., Goodman, Morris, Prychodko, William. 'Immunodiffusion Evidence of Primate Phylogeny.' in *Molecular Anthropology.* eds. M. Goodman et al. New York: Plenum Press, 1976.

Dennett, D. C. *Brainstorms.* Cambridge: MIT Press, 1978.

---.*Consciousness Explained.* Boston: Little Brown, 1991.

---.*Darwin's Dangerous Idea.* New York: Simon and Schuster, 1995.

Devine, P. E. 'The Moral Basis for Vegetarianism.' in *Philosophy.* 53. 1978: 481-505.

Dombrowski, Daniel. A. *Babies and Beasts.* Chicago: University of Illinois, 1997.

Ehrlich, P. and Raven, P. 'Differentiation of Populations.' in *Science.* 165. 1969: 1228-1232.

Feinberg, Joel. 'Abortion.' in *Matters of Life and Death.* 2nd.ed. ed. Tom Regan. New York: Random House, 1986.

Fentress, J. C. 'The Categorization of Behavior.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson. Boulder: Westview Press, 1990.

Fetzer, J. H. 'Ethics and Evolution.' in *Investigating the Biological Foundations of Human Morality.* Lewiston, N. Y.: Edwin Mellen Press, 1996.

Feyerabend, Paul. *Against Method.* Atlantic Highlands, N. J.: Humanities Press, 1975.

Francione, Gary. *Introduction to Animal Rights: Your Child or The Dog?* Philadelphia: Temple University Press, 2000.

Gallese, Vittorio and Goldman, Alvin. 'Mirror Neurons and the Simulation Theory of Mindreading.' in *Trends in Cognitive Science.* 2. 1998: 493-501.

Ghazanfar, Asif A. and Hauser, Marc D. 'The Neuroethology of Primate Vocal Communication: Substrates for the Evolution of Speech.' in *Trends in Cognitive Science.* 3. 1999: 377-384.

Goldman, Alvin. *Epistemology and Cognition.* Cambridge: Harvard University Press, 1986.

Gould, Stephen Jay. 'American Polygeny and Craniometry Before Darwin.' in *The 'Racial' Economy of Science.*

ed. Sandra Harding. Bloomington: Indiana University Press, 1993.

Greenfield, P. M. and Savage-Rumbaugh, E. S. 'Grammatical Combination in *Pan paniscus*: Learning and Invention in the Evolution and Development of Language.' in *Comparative Developmental Psychology of Language and Intelligence in Primates.* eds. S. Parker and K. Gibson, New York: Cambridge University Press, 1990.

Griffin, Donald. *Animal Minds.* Chicago: Chicago University Press, 1992.

Hauser, M. D. 'Octogenetic Changes in the Comprehension and Production of Vervet Monkey (*Cercopithecus aethiops)* Vocalization.' in *Journal of Comparative Psychology.* 103. 1989: 149-158.

---.'Costs of Deception: Cheaters are Punished in Rhesus Monkeys.' in *Proceedings of the National Academy of Science.* 89. 1992c: 12137-12139.

---.*The Evolution of Communication.* Cambridge: MIT Press, 1997.

Hauser, Marc D. and Nelson, Douglas A. ' "Intentional" Signaling in Animal Communication.' in *Trends in Ecology and Evolution.* 6. 1991: 186-189.

Herman, Louis M. and Morrel-Samuels, Palmer. 'Knowledge Acquisition and Asymmetry Between Language Comprehension and Production: Dolphins and Apes as General Models for Animals.' in *Interpretation and Explanation in the Study of Animal Behavior.* eds. Marc Beckoff and Dale Jamieson. *Boulder:* Westview Press, 1990.

Hume, David, 1739. *A Treatise of Human Nature.* ed. L. A. Selby-Bigge. Oxford: Oxford University Press, 1888.

---.1779. *Dialogues Concerning Natural Religion.* Part II. ed. Henry D. Aiken. New York: Hafner Publishing, 1969.

Johnson, Lawrence E. 'Can Animals Be Moral Agents?' in *Ethics and Animals.* IV/2. 1983: 51-60.

Kant, Immanuel. 1784. *Foundations of the Metaphysics of Morals.* 2nd. ed. trans. Lewis Whitebeck. New York: Macmillan Publishing Company, 1990.

Leahy, M. P. T. *Against Liberation.* London: Routledge, 1991.

Lewin, Roger. 'Do Animals Read Minds, Tell Lies?' in *Science.* 238. 1987: 1350-1351.

Lomasky, L. E. *Persons, Rights, and the Moral Community.* New York: Oxford University Press, 1987.

Midgley, M. *Animals and Why They Matter.* Athens, GA.: University of Georgia Press, 1983.

Mill, John Stuart. 1861. *Utilitarianism.* ed. Oskar Piest. New Jersey: Prentice Hall, Inc. 1957.

Millikan, R. G. *Language, Thought, and Other Biological Categories.* Cambridge: MIT Press, 1984.

Montgomery, Charlotte. *Blood Relations.* Toronto: Between the Lines, 2000.

Moore, G. E. 1903. *Principia Ethica.* Cambridge: Cambridge University Press, 1968.

O'Grady, William and Dobrovolsky, Michael, eds. *Contemporary Linguistic Analysis: An Introduction.* Toronto: Copp, Clark, Pitman Limited, 1992.

Petrinovich, Lewis. *Human Evolution, Reproduction, and Morality.* Cambridge: MIT Press, 1998.

---.*Darwinian Dominion.* Cambridge: MIT Press, 1999.

Pluhar, Evelyn. *Beyond Prejudice.* London: Duke University Press, 1995.

Povinelli, D. J. and Eddy T. J. 'What Young Chimpanzees (might) Know About the Mind.' in *Chimpanzee Cultures.* eds. R. W. Wrangham et al. Cambridge: Harvard University Press, 1996.

Rachels, James. *Created From Animals: The Moral Implications of Darwinism.* Oxford: Oxford University Press, 1990.

Regan, Tom. *The Case for Animal Rights.* Berkeley: University of California Press, 1983.

---.'Animal Rights, Human Wrongs.' in *Environmental Philosophy.* eds. Michael Zimmerman et al. Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1993.

Richards, Robert J. 'A Defense of Evolutionary Ethics.' in *Biology and Philosophy.* 1. 1986: 265-293.

---.'Justification Through Biological Faith.' in *Biology and Philosophy.* 1. 1986: 337-354.

Ristau, C. A. ed. *Cognitive Ethology.* Hillsdale: Lawrence Erlbaum Association, 1991.

Rodd, Rosemary. *Biology, Ethics and Animals.* Oxford: Clarendon Press, 1990.

Rollin, Bernard E. *The Unheeded Cry.* New York: Oxford University Press, 1992.

-----.*Farm Animal Welfare.* Ames: Iowa State University Press, 1995.

Rosenberg, Alexander. 'Is There An Evolutionary Biology of Play?' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson. Boulder: Westview Press, 1990.

Ryder, Richard D. *Animal Revolution.* Oxford: Basil Blackwell, 1989.

Savage-Rumbaugh, E. S. 1987. 'A New Look at Ape Language: Comprehension of Vocal Speech and Syntax.' in *Nebraska Symposium of Motivation. 35. Comparative Perspectives in Modern Psychology.* ed. D. Leger. Lincoln: University of Nebraska Press, 1988.

Savage-Rumbaugh, Sue and Brakke, Karen E. 'Animal Language: Methodological and Interpretive Issues.' in *Interpretation and Explanation in the Study of Animal Behavior.* Vol. 1. eds. Marc Beckoff and Dale Jamieson. Boulder: Westview Press, 1990.

Savage-Rumbaugh, Sue and Lewin, Roger. *Kanzi.* Toronto: John Wiley and Sons, Inc., 1994.

Schmidt-Raghaven, Maithili. 'Animal Liberation and Ahisma.' in *Ethical and Political Dilemmas of Modern India.* eds. Ninian Smart and Shivesh Thakur. Basingstoke: The Macmillan Press, 1993.

Singer, Peter. *Animal Liberation.* Wellingborough: Thorsons Publishers Limited, 1975.

---.*Practical Ethics.* Cambridge: Cambridge University Press, 1979.

---.ed. *In Defense of Animals.* Oxford: Basil Blackwell, 1985.

Skutch, Alexander F. *Parent Birds and Their Young.* Austin: University of Texas Press, 1976.

Sober, Elliot. *Philosophy of Biology.* Boulder: Westview Press, 1993.

Sokal, R. and Crovello, T. 'The Biological Species Concept A Critical Evaluation.' in *American Naturalist.* 104. 1970: 127-153.

Spencer, Herbert. *The Data of Ethics.* New York: Thomas Y. Crowell and Company, 1879.

Stallwood, Kim W. ed. Speaking Out for Animals. New York: Lantern Books, 2001.

Taylor, Paul. *Respect for Nature.* Princeton: Princeton University Press, 1986.

Taylor, Shelley E. et al. eds. *Social Psychology.* 9th ed. Upper Saddle River, N. J.: Prentice hall, 1997.

Tinbergen, Niko. *The Study of Instinct.* Oxford: Oxford University Press, 1951.

Wood-Gush, D. G. M. *Elements of Ethology.* London: Chapman and Hall, 1983.

Van Valen, L. 'Ecological Species, Multispecies, and Oaks.' in *Taxon.* 25. 1976: 233-239.

Waller, Bruce N. 'What Rationality Adds to Morality.' in *Biology and Philosophy.* 12. 1997: 341-356.

Wechkin, Stanley, Masserman, Jules H., and Terris, William Jr. 'Shock to Conspecific as an Aversive Stimulus.' in *Psychonomic Science.* 1. 1964: 47-48.

Wilson, Edward O. *Sociobiology: The New Synthesis*.Cambridge: Harvard University Press, 1975.

Zuberbuhler, K., Cheney, D. L., and Seyfarth, R. M. 'Conceptual Semantics in a Nonhuman Primate.' in *Journal of Comparative Psychology*. 113. 1999: 33-42.